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FYI

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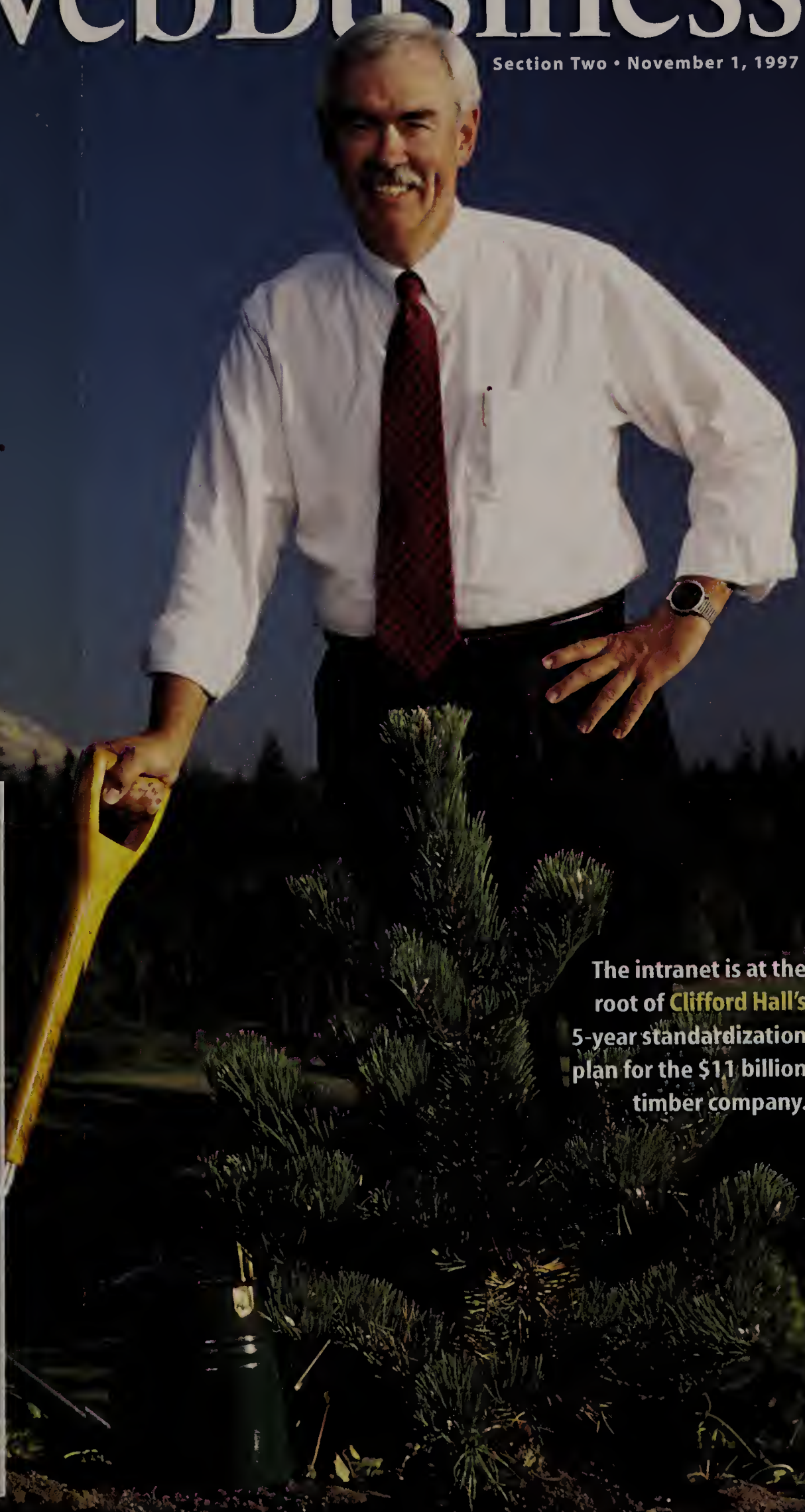
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Fertile Ground

Can an intranet help
Weyerhaeuser cultivate
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The intranet is at the
root of Clifford Hall's
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plan for the \$11 billion
timber company.

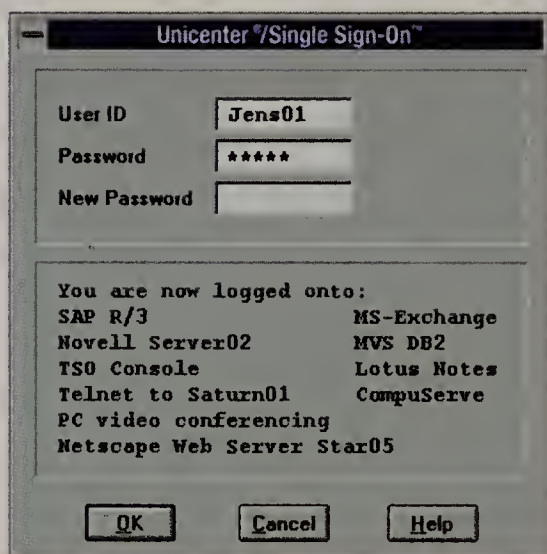
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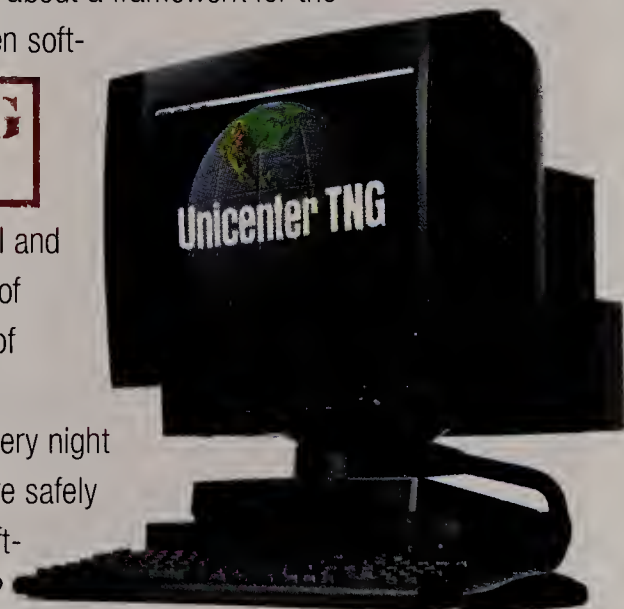
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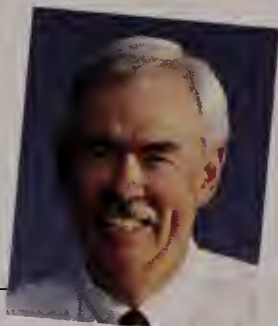
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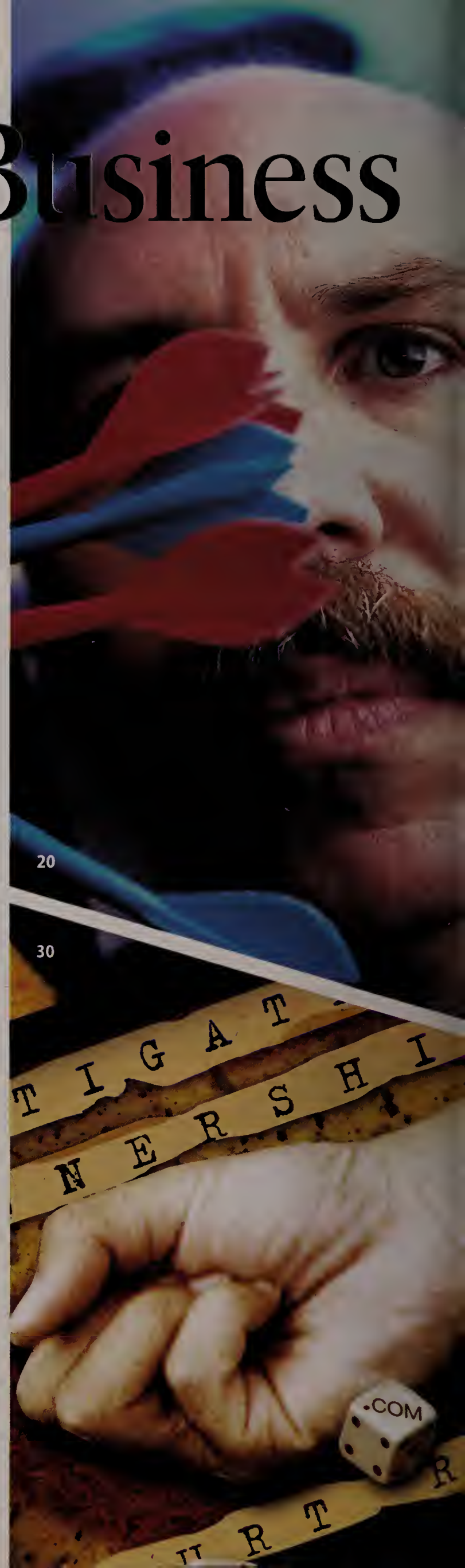
BOOK EXCERPT: INTRANETS Sun's CIO discusses the intranet balancing act: costs, benefits, risks and measuring value in terms of people as well as profits.

on the cover



“We are pushing technology, but if there is not a business case for it, we are not going to use it.”

Weyerhaeuser Co.'s
Clifford Hall
Cover photo
by Kent Hanson



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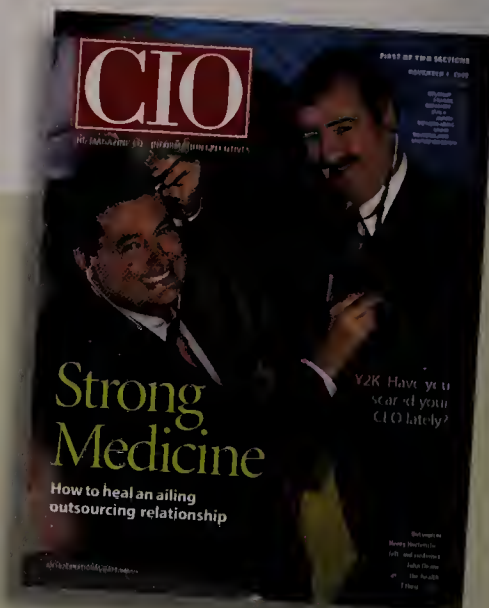
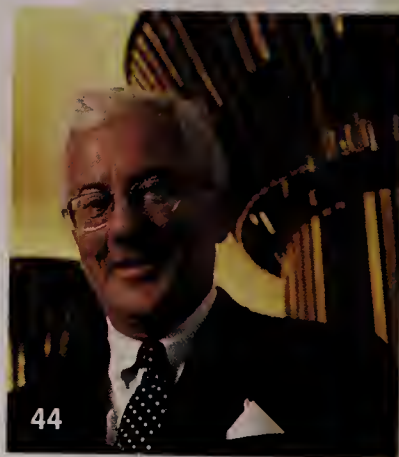
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PREPARING FOR CHANGE IN THE

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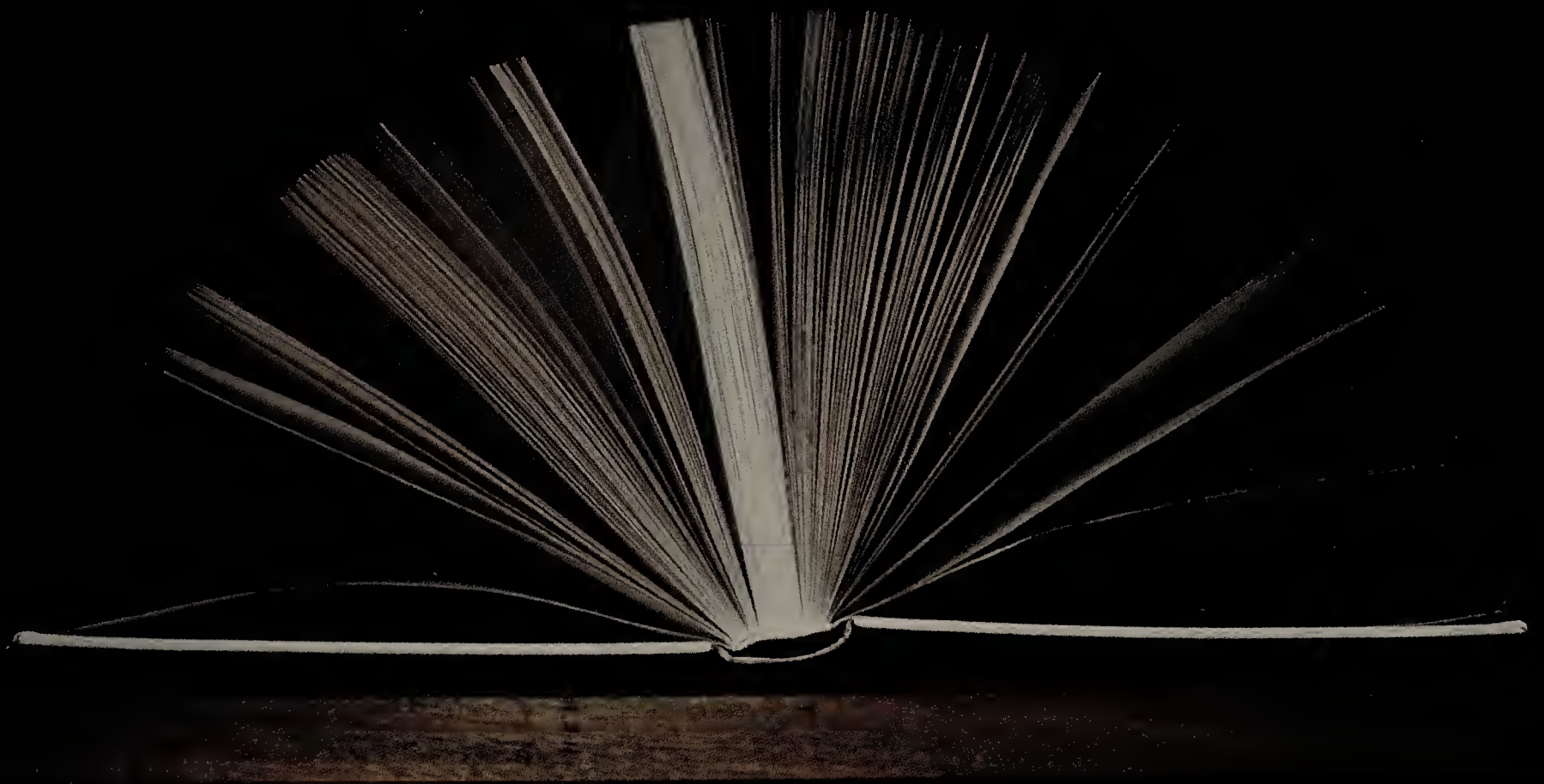
EXECUTIVE COUNSEL SAP implementations require money, planning and a new breed of user. Learn how to use super users.

YEAR 2000 CHALLENGE To launch a successful transition, you need to do only two things: educate and collaborate.

EMERGING TECHNOLOGY A more complicated database is good news if you're looking for ways to store images, audio, video and other Web elements.

SHOP TALK Coopers & Lybrand's Ellen Knapp on managing knowledge assets.

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NORMALLY, I MISTRUST PEOPLE WHO WARN THAT THEY'RE ABOUT TO articulate an exception to one of their deeply held convictions; it's the kind of qualifier that forces me to question how deeply those soon-to-be-undermined convictions really run. But now that I'm about to do it myself, I guess (in my case) squishy equivocation is OK after all.

Technology ought to respect people's privacy; frequently it doesn't.

We have a story, beginning on Page 44, that tells how the Web—powered by burgeoning godzillabytes of personal data—is making life easier and more profitable for skip tracers and their clients. Finding people who may not want to be found, often because of the financial obligations they've left in their wakes, looks to be one of those relatively few defensible consequences of privacy's unraveling.

I mean, why should you or I or anyone object if deadbeat dads and other debtors are called to account? And if the process can be accelerated or made less costly by applying technology creatively, well that's just fine.

The problem, of course, is that the many of us who are not deadbeats swim in most of the same data pools as those who are. And occasionally, when a deadbeat-catching net is cast into these oceanic databases, a few too-nearby neighbors of the real miscreants can get caught

as well—not unlike dolphins in a tuna net. As Contributing Writer Joseph Maglitta reports, "if you can track down people to ask them to pay a bill, you can track down people to ask them to buy something, or worse."

Sometimes it seems nothing is worse than kicking back at home of an evening and having some eager telemarketer reach into your sanctum with a tenacious sales pitch. If Web-driven autodialers are fueling that sort of traffic along with the settling of scofflaw accounts, there ought to be a law. Moreover, at the most extreme edge of privacy invasion is the example from Maglitta's story of a woman whose abusive husband located her over the Web, raising anew the old question of whether the benefits of a technology can be valued in isolation from its risks.

Two (or more) social principles war with each other around these issues. We are a nation founded on a strong belief in the free exchange of information and ideas (including an unfettered commercial marketplace); and we are also a society that exalts privacy and the home-as-castle sanctity of individual happiness. As technology critic Neil Postman has always observed, technologies are usually given carte blanche to permeate our lives long before most of us bother to seriously weigh their costs against their benefits. Big databases of personal information may predate the Web, but if the Web exacerbates the likelihood of abuses, how great is the benefit? It's a question that won't be answered easily—or soon.

But it's one that many readers may have to ponder frequently. Would you happily champion your business's unfettered right to use customer data in any way that could conceivably be profitable? Let us know what you think:

mccreary@cio.com.

Lew McCreary
Editorial Director

PHOTO BY JERRY MARGOLYCZ



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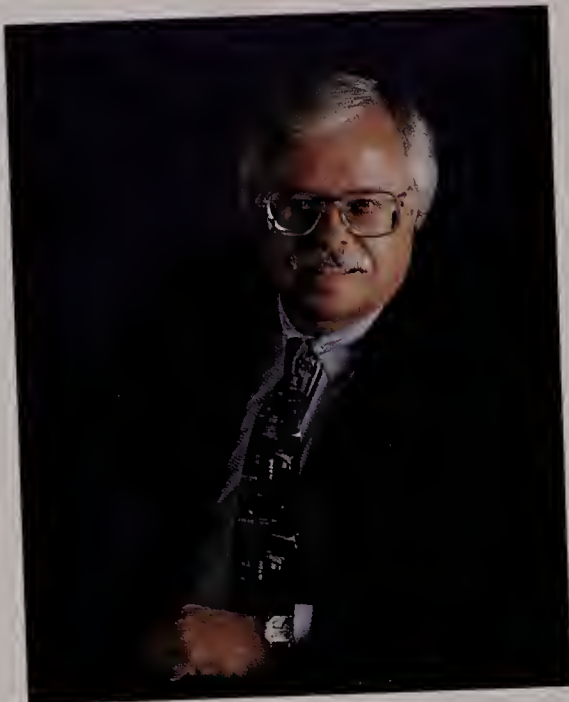


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IN MY OPINION

AS I TRAVEL THE WORLD, speaking to CEOs and other top management executives, I am amazed at how many still haven't seen the light regarding the impact of the Web on their organizations' success in the 21st century. As *CIO* readers, you should be in the vanguard to show that future corporate survival includes embracing the Net and using it to achieve your business objectives.



I recently spent some time with Mary Meeker, Morgan Stanley, Dean Witter, Discover & Co.'s award-winning Internet analyst, who provided some valuable statistics about the Net that should raise every executive's interest in jumping on the Web bandwagon now.

Note that U.S.-based information technology spending as a share of business capital equipment spending has risen from 28 percent in 1987 to 47 percent in 1997, making IT the single-largest component. Annual personal computer shipments worldwide may grow from 71 million units in 1996 to 130 million in 2000. The

number of PC users will climb from 167 million in '96 to 269 million in 2000. By 2000, we can assume, 58 percent of PC users will access the Internet, up from 17 percent in '96. This figure indicates a huge audience of 157 million potential prospects and customers for you to reach.

Let's look at the Internet phenomenon in terms of growth rates of other media. To reach 50 million users, it took radio 38 years, television 13 years, cable 10 years and the Internet only 5 years.

While most people focus on when consumer purchases will be made via the Web, business-to-business sales are today's driving factor and will be even bigger in the future. Cisco Systems Inc. had a \$2 billion run-rate in sales via the Internet in August. Cisco is even lowering its sales and service costs and increasing customer satisfaction. Without its Web site, Cisco would need to double its engineering sales/support group from 1,000 to 2,000 engineers. Dell Computer Corp. is doing more than \$2 million in online sales per day. General Electric Co. currently buys over \$1 billion in supplies online, both internally and with 1,400 external suppliers.

CIO Web Business is dedicated to being your guide to success in the Internet age. I'm certain you'll agree that the best is yet to come in terms of how you may prosper via the Internet. As always, I welcome your input on topics you'd like us to explore here. Please e-mail me: jlevy@cio.com.

Wayne L. Levy

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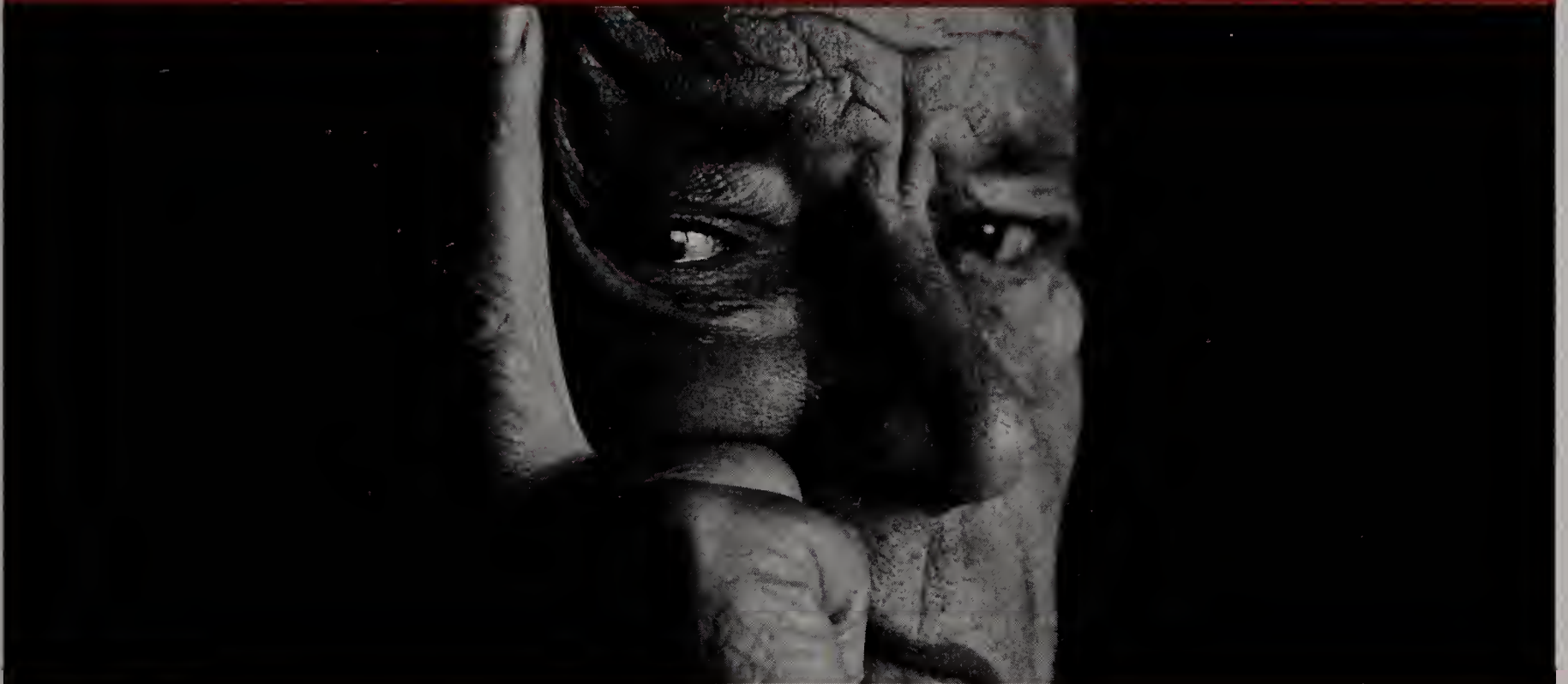
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THREADS

School Ties

THE URGE TO LEARN whether a high school sweetheart is still sweet and single has motivated many alums to spend \$50 or so attending a reunion. Now an Internet entrepreneur hopes such curiosity will move graduates to spend \$15 on his Web business.

ClassMates Online Inc. (www.classmates.com), launched by Randy Conrads from his Kent, Wash., home, is building a Web-based database of U.S. and Canadian high school alumni and e-mail addresses. Registration is free, and as users register, they see a list of other registered alums from their school. To get their classmates' e-mail addresses, however, users must pay \$15 (using their credit card over the Web if they wish) for a three-year membership.

One Web analyst questioned why anyone would pay ClassMates \$15 when they could simply look up someone's e-mail address for free at a directory Web site. Conrads has an answer: Women often change their last names when they marry, making them hard to find via a general directory. And if a classmate has a common name, such as "John Smith," a directory search could return multiple responses. In addition to getting e-mail addresses, ClassMates members can post short biographies or links to personal Web pages and receive an e-mail newsletter to keep them up-to-date on other class members who have registered, Conrads says. They can also go to the ClassMates site and send "Hi Notes"—e-mail composed on a Web-based form that keeps the recipient's address pri-

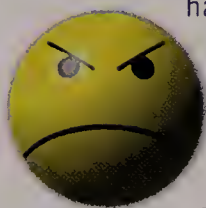


Most Likely to Succeed: Randy Conrads hopes high school loyalties and memories of youthful romance will keep people signing up with ClassMates Online.

vate—to registered alums from other schools.

As of August, some 21 months after its December 1995 launch, ClassMates claimed more than 400,000 high school graduates registered from roughly 25,000 schools, including U.S. and Canadian territorial and overseas schools, although only a fraction of registrants have paid \$15 to become members. The business already brings in enough money to pay the bills and, more recently, to pay him a salary, Conrads says. Granted, it does not match the \$70,000-plus salary he made before he ended his 20-year Boeing career to start the site.

Too Much of a Good Thing



Even before most people knew what they were, ISPs had overpopulated the consumer market, at least according to many industry observers. The doomsday scenario continues, and now analysts at Gartner Group Inc. are predicting that the current population of ISPs, 4,100, will literally be decimated, that is, reduced to one-tenth of its current population. Gartner offers three clues to help you recognize survivors.

- They will offer service agreements with penalties for nonperformance.
- They will have implemented resource reservation protocol.
- They will have a strong business-to-customer relationship, one that will enable them to compete in the incipient slaughter.

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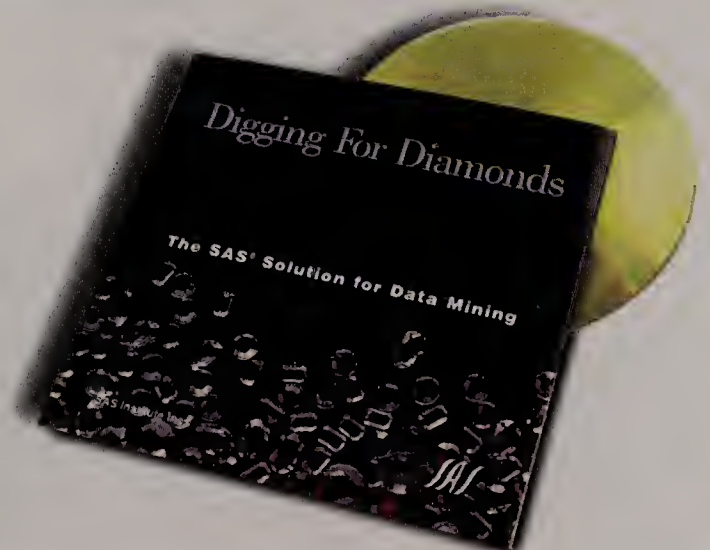
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Off the CyberShelf

Overdrive: Bill Gates and the Race to Control Cyberspace
By James Wallace
John Wiley & Sons
\$24.95

MICROSOFT CORP. is no doubt displeased to be considered a late adopter, but as James Wallace documents in *Overdrive: Bill Gates and the Race to Control Cyberspace*, the giant software company was way behind the curve when the World Wide Web unfurled.

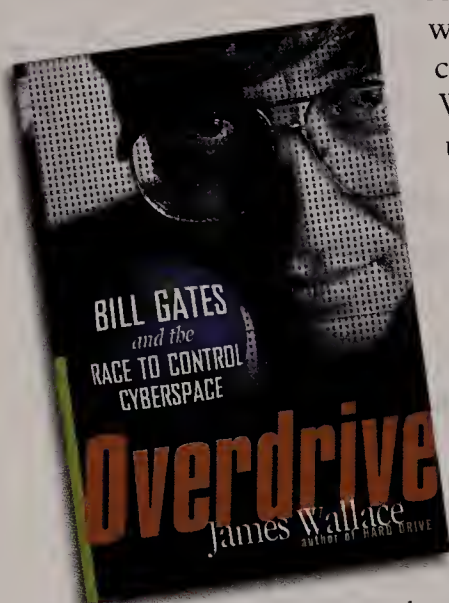
Overdrive chronicles the range of business decisions that Microsoft made to take a remarkable 180-degree change of direction, an about-face

that Wallace believes to be "unprecedented in the history of American business."

Wallace delves perhaps too deeply into the wide array of business deals signed by the "sleeping giant" in the face of the Internet's rapid emergence as a vehicle for commerce and of the industrywide effect that these deals had. When

Microsoft licensed Sun Microsystems Inc.'s Java language, for example, the implications were widespread: Competitor Netscape Communications Corp. felt it had received an endorsement of its own Internet strategy from Microsoft, a bitter rival, and Sun was forced to persuade America Online Inc. that Java could help it too. On a larger and more interesting level, Wallace demonstrates how the Internet benefited those competitors that chose to work together in innovative ways, and he outlines the steps through which Microsoft struggled to come up with a plan to move to the Internet platform. Highlights include the arduous and tenuous deal made with Spyglass Inc. to provide Microsoft with Mosaic, an early browser technology; the founding of online adversary Netscape; and seemingly endless legal hurdles that Microsoft faced, both in the launch of MSN and through repeated federal examinations into possibly monopolistic practices.

Overdrive began as an update to a new edition of *Hard Drive: Bill Gates and the Making of the Microsoft Empire*, a book that Wallace wrote with Jim Erickson five years ago. Because Microsoft was less than cooperative, the new book leans heavily on tales from Microsoft rivals and former employees. It's a fascinating if not entirely balanced read, and one that can be easily digested by a nontechnical audience. —Alex Frankel



HIP TO BE SQUARE

“In the 1970s and 1980s, kids coming up in high schools and colleges around New York formed rock and roll bands.... Today they form new media companies.”

—Jason Chervokas, Editor and Co-founder, @NY, The New York Internet Newsletter

What You See Is Not What You Get

Every high school kid who has built a Web page knows about "word stuffing," the trick of embedding invisible words in the HTML coding so that search engines will serve up your site when someone searches those words. Generally, the idea is to embed words that are searched often: "Sex" is a reliable choice.

But as the practice spread to the business world, it took some new twists. National Envirotech Group, a pipeline reconstruction company, for example, chose the nifty marketing strategy of "stuffing" the name of a larger competitor, Insituform Technologies Inc., into its Web page. When someone searched for Insituform, they might be sent Insituform's URL, but the URL of National Envirotech would be sent along as well. Insituform's lawyers were not amused. In a lawsuit filed in New Orleans, they argued that anyone searching for their company might think Envirotech was affiliated with it.

Envirotech claimed that it had done nothing wrong because there is no law that prohibits the use of trade names in the key word of Web sites. Despite its alleged innocence, Envirotech settled and removed the disputed material.

Other cases, such as one involving a Web site operator who embedded references to *Playboy* magazine in his pages, offer a more helpful model for clever Web developers. The judge in that case ordered the removal of the contested terms on the grounds that they infringed on *Playboy*'s trademark. Just because you can't see it doesn't mean it can't put you in jail. —Art Jahnke



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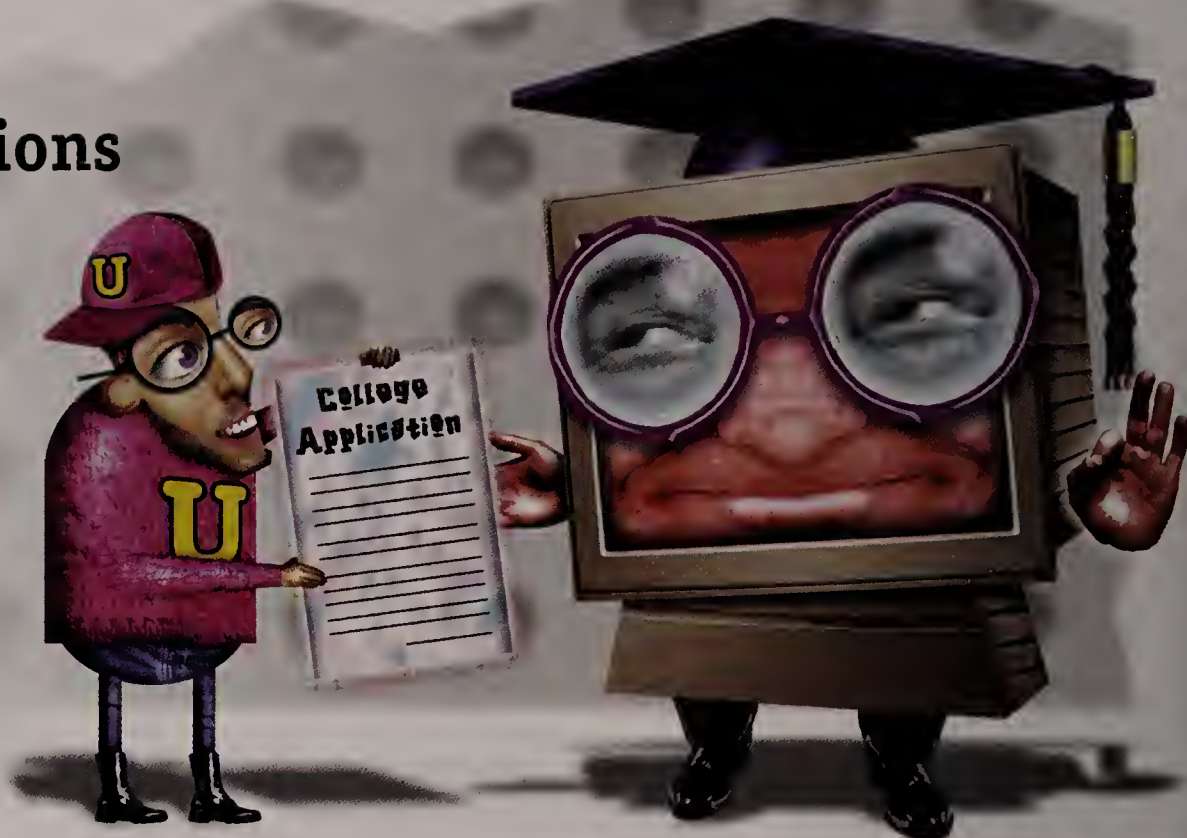
Killer Applications

ONLINE STUDENTS are on-the-ball students. That's what colleges are finding as more of them use the Web as a recruiting tool, according to a recent survey of 500 schools commissioned by a New York City-based recruitment and enrollment marketer, Austin Knight Inc.

"What they're finding about the Internet is that there can be a strong direct response element," says Dan Wilmer of Austin Knight, which commissioned the study from Pathfinder Research Group. "Beyond portraying [their] image out there digitally, they're able to have somebody physically put in their name and address and zap it back to the school."

Nearly all of the colleges, professional schools and trade schools surveyed have a Web site (or are building one), while 60 percent view the Web as a key source of student prospects. And Web feelers account for a fast-growing 8 percent of schools' total inquiries—not bad, Wilmer says, given the newness of the Web. "It eliminates huge distance and cost factors in recruiting students outside their immediate vicinity," says Wilmer, an account executive for enrollment marketing at Austin Knight.

Eighty percent of school officials surveyed believe students who seek them out over the Web are as qualified, or better qualified, than those who find them by more traditional means, such as college fairs or alumni referrals. Take Worcester Polytechnic Institute in Massachusetts, which received about half of its 3,200 applications electronically this year. Web applicants who accepted the school's admission offer scored an average 40



points higher on their Scholastic Aptitude Tests than did their pen-and-paper counterparts.

"A slightly different type of student would be on the Web and

would be comfortable using the Web," suggests Robert Voss, WPI's executive director of admissions and financial aid. "More intellectually curious, perhaps."

Fast, Fast Relief

Saving time saves money, or so the business maxim goes. But when your business is disaster relief, saving time can also save lives. A new Web site seeks to do just that.



AlertNet (www.alertnet.org) gives disaster workers a free source of information and means of communication aimed at helping speed their responses to catastrophes worldwide. Launched by The Reuter Foundation, AlertNet features Reuters' breaking news on political and natural crises from Middle East militants' bombings to Montserrat's volcano. The noncommercial site also gathers background data such as lists of government officials and travel advisories on countries from Afghanistan to Zimbabwe. Via a Web-based form, AlertNet's members (nongovernmental organizations, or NGOs, offering international disaster relief) can post basic information on their operations as well as reports from the field.

The site's news, safety advisories, NGO information and press releases are open to the public, says Stephen Somerville, director of the London-based Reuter Foundation. Two password-protected, threaded discussion groups are restricted to members. In the issues forum, relief workers can trade comments on the latest international political news while in the logistics forum an agency can post a note seeking others to share a chartered supply plane.

The Reuter Foundation hopes AlertNet will have 50 NGO members by year's end.

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Content Is (Sometimes) King

THE ABUNDANCE of choice on the Internet is understood to be its greatest strength and its greatest weakness. Too much choice, after all, can leave customers confused and inclined to log off and pick up a good book.

So how can a business operating in a medium of virtually infinite choice keep the customer satisfied? What kind of content will keep the customer coming back? Philip B. Evans, a senior vice president of The Boston Consulting Group Inc., has an answer. In fact, Evans has two answers, and they both come from another medium where the number of choices has gone through the roof.

"If you look at television," says

Evans, "you see a medium that has had a tenfold multiplication in the number of choices in just a few years.

The television audience offers examples of the two strategies that people who are faced with too many choices will follow."

In one model, Evans says, people are attracted to a particular program, such as a Bill Cosby sitcom or a certain sports event. Here, says Evans, content is king, and

customer loyalty is so strong that if the show is moved to another channel, the audience will follow.

The second model, says Evans, proves that content is not always king. Sometimes the king is the format, such as the Discovery Channel, which attracts a large following of customers who want a certain kind programming.

Evans' thesis, presented in "Strategy and the New Economics of Information," an article co-written with colleague Thomas S. Wurster and published in the September/October issue of *Harvard Business Review*, offers a good reason why every Web business should care: money.

In the first model, it's the originator of the program who gets rich. In the second, the big winner is the network.

"There is a myth that lots of multimedia executives believe," says Evans. "It says that content is king. That's actually sometimes true and sometimes not true. In the hit-centered model, the Bill Cosby model, that is true. But the more obvious model is the Discovery Channel, where the navigator, which is the channel, is king. People who realize that can build a very nice business for themselves." **CIO**



Pushed Out

Thinking of pushing out your push server? If so, Forrester Research Inc. says you are not alone.

The research firm's recent survey of 35 U.S. push technology adopters finds that 40 percent will soon or have already outsourced their push servers to a hosting company. Another 49 percent say they may offload their push servers within the next two years. "They're not in the business of running Internet servers of any kind, whether they be Web servers or push servers," says David Cooperstein, a Forrester analyst in Cambridge, Mass. "They're just in the business of managing whatever content they happen to be developing."

Cooperstein thinks the widespread outsourcing of push may encourage businesses to outsource other application servers as well. Hosting companies will likely first offer to host Web server add-ons, such as commerce servers or site management and analysis tools, Cooperstein says. Community applications, such as groupware and conferencing, will follow. Packaged applications, such as sales force automation systems or supply chain management tools, will take the longest to move out of house, perhaps three to five years, as the applications break into components or if their users are widely distributed, he says.

ISPs who want to expand into hosting more than basic Web sites will have to learn how the other servers work and how to keep them running 24 x 7, as well as "prove that they can handle a mission-critical application the way an EDS might today," Cooperstein says. Traditional outsourcers, meanwhile, will have to change their business models. "They're coming from a world of multibillion dollar, multiyear contracts to a world of 'this month and we'll see how it goes' contracts," Cooperstein says.

—Sari Kalin



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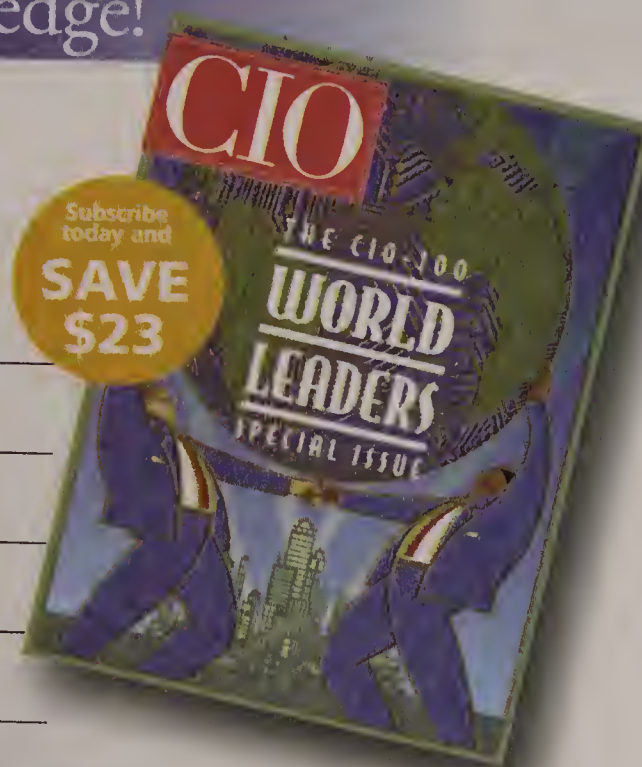
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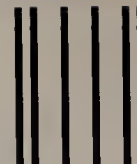
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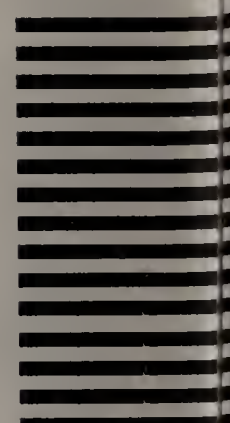
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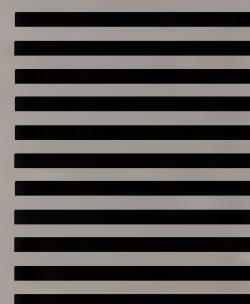
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What you never thought possible.

Making Them Pay

While other subscription-only sites publish and perish, BusinessTech earns its keep

BY ANNE STUART

M

ANY NEW-MEDIA PUBLISHING VENTURES learned a painful, expensive lesson early on: A Web site does not live by subscription alone. No matter how luminous their reputations, no matter how stellar their content, most online publishers have been unable to overcome the Internet's "information wants to be free" ethos. They have failed to woo enough—or in some cases, any—visitors willing to pay even a little just for content. In perhaps the best-known case, Microsoft Corp.'s highbrow political e-zine, Slate, delayed, then abandoned (temporarily, at least), its 1996 plan to charge readers \$19.95 a year. One notable exception to the widespread disappointment is The Wall Street Journal Interactive Edition, which claims more than 100,000 subscribers paying either \$29 or \$49 per year. Others, such as Mainspring Communications Inc., charge membership fees but offer activities and services in addition to content.

In light of that overall track record, it was a bit ambitious for two New Yorkers to convert a print newsletter, *Business Technology*, into BusinessTech, an online-only magazine that currently survives solely on subscription fees. Launched in March 1996, BusinessTech (www.businesstech.com) hasn't made its publishers millionaires. But it has attracted about 1,000 subscribers, all willing to pay \$99 a year to access the site's business, technology and strategy content. In an environment where most users expect everything for nothing, it's an accomplishment worth noting—

even as the partners begin evolving their business model to subsidize subscriptions with other revenues, including investment capital and sponsorships.

But that's getting ahead of the story.

The BusinessTech tale begins with founders Neal Goldsmith and Ed Rosenfeld building their careers, Goldsmith as a social psychologist turned technology strategist for AT&T Corp., Gartner Group Inc. and American Express Co., Rosenfeld as a founding editor of *Omni* magazine and publisher of various print newsletters, including *Intelligence: The Future of Computing*,

which he still produces. The two crossed paths several years ago when Goldsmith, then an American Express executive and a subscriber to *Intelligence*, invited Rosenfeld to speak to his colleagues at American Express. They became friends. About four years ago, Goldsmith left American Express to launch a technology consulting business, Tribeca Research Inc. In a separate venture, he also launched Business Technology, a \$495-a-year print newsletter covering change management, technology strategy and reengineering for an executive audience of several hundred readers.

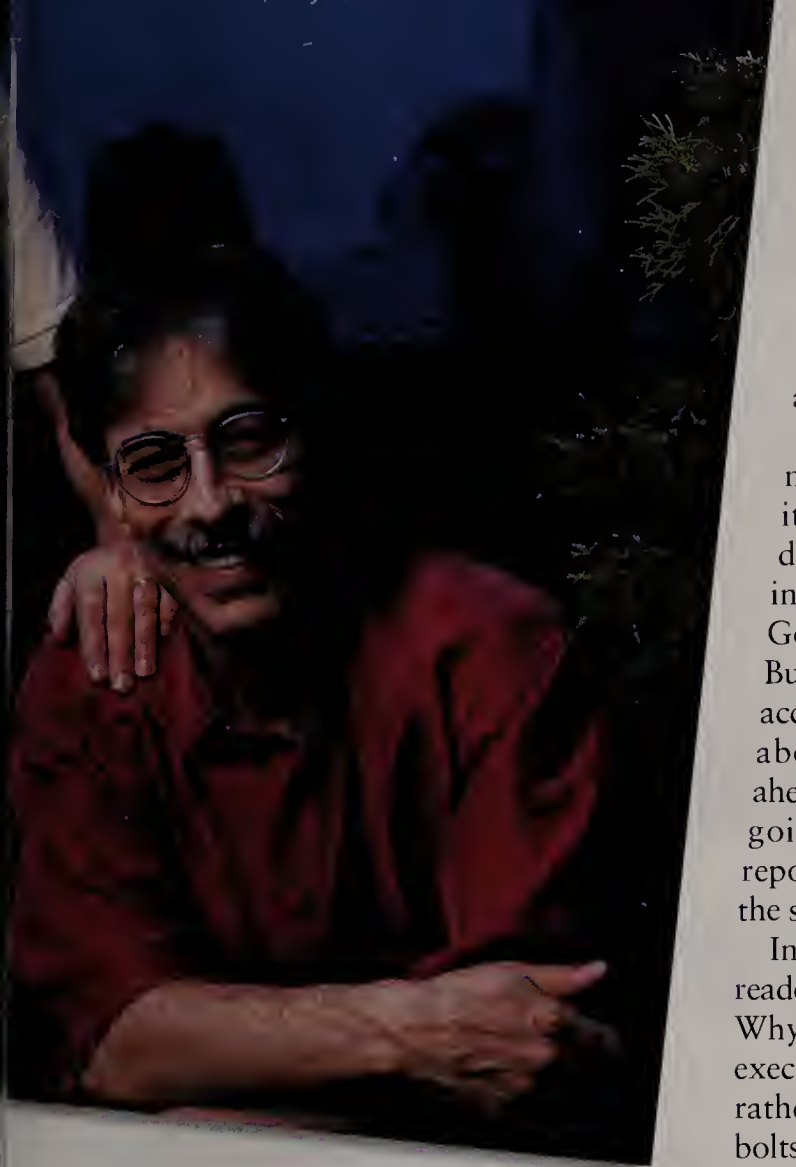
Three years later, tracking the Web's explosive growth, Goldsmith and Rosenfeld, now business partners, overhauled the newsletter: They condensed its name and focused it more intensively on Internet business, emerging technologies and strategic trends. But, most significantly, they jettisoned the expensive-to-produce print version in favor of an online magazine.

www.businesstech.com



PHOTOGRAPHY BY JOHN RAE

Tech Talk: Ed Rosenfeld (left) and Neal Goldsmith hope that their \$99-a-year newsletter will flourish in the niche between freebies and the \$10,000 market.



Goldsmith worried about that last decision, wondering who would pay for information when the Web offers so much for free. Rosenfeld persuaded him that information overload actually worked in their favor. "The more data that's out there, the more appealing and salable our editorial focus and selection, our decades of experience," Goldsmith says now. "That's what we're selling, really"—knowledge and their combined ability to filter and analyze the most important business and technology information.

That same conviction steered the pair away from an attempt to build the Web's biggest all-purpose repository of business-technology information. Instead, they've focused on selling a sophisticated, strategic blend of technology and business news, analysis, guest columns, reviews of management consulting methodologies, corporate profiles, legal coverage and case studies. Visitors will

also find an online gallery of digital art and interviews with technology leaders ranging from Paul Saffo, director of the Institute for the Future to Kevin Kelly, *Wired* editor.

"We're trying to stay ahead of the curve," Goldsmith says. "If data's available free, we want to give information. If information is available free, we want to give analysis. If analysis is available free, we want to give wisdom. There's always going to be, in our professional life spans, a leading edge beyond which automation has not reached."

From the start, the voice of BusinessTech was unique. Rosenfeld sums it up as "iconoclastic, a little sardonic; we've got a bit of an attitude, in a very proactive, positive way." Goldsmith says the partners wanted BusinessTech to be authoritative yet accessible, trustworthy, hype-free and, above all, a little "out there" and ahead of its time: "We decided we were going to look over the horizon and report back to the traditional folks on the shore what we were seeing."

In their debut editorial, the pair told readers "Why We Hate Technology (and Why You Should, Too)," encouraging executives to focus on system interfaces rather than on the underlying nuts and bolts. In a later issue, they took a critical look at push technology weeks before national print publications ran breathless cover stories hailing it as the Internet's Next Really Big Thing. Every week the publishers update the "News and Reviews" and "Companies" sections of the site, which otherwise follows a monthly publication schedule, and store the older material in searchable archives.

All of that has made BusinessTech indispensable to one high-profile subscriber. "It's one of the few places I go to get past the clutter of the day-to-day announcements and even the clutter of the specific strategic sites," says Gene DeRose, chairman and CEO of Jupiter Communications LLC, who gives the pair extremely high marks for creating and presenting practical, entertaining, insightful content. "They give an IT view but from a very high-end point of view," he says. "They're very good at keeping a clean, narrow view."

Of the Goldsmith-Rosenfeld business

model, DeRose says: "They've done a great job of positioning themselves in the right range and understanding [their audience]. They don't want AOL or Yahoo's millions of customers. This is about the right hundred or thousand customers."

STILL, BUSINESSTECH'S FOUNDERS cheerfully acknowledge that not everything has played out as they anticipated.

Surprise No. 1: They assumed that Fortune 500 top executives would be their primary customers. They aren't. "We'd love to sell to them, and we do get some of them," Goldsmith says. But he and Rosenfeld quickly learned that top-level folks spend far less time on the Web than those a few lines down on the corporate flowchart. "We were selling more to EVP-wannabes, those managers and vice presidents who read *Wired* magazine hidden behind the covers of the *Harvard Business Review*," as well as entrepreneurs, consultants and the leaders of small and midsize companies.

Surprise No. 2: While they anticipated some international subscribers, Rosenfeld and Goldsmith never expected that one-third of their readers would reside outside the United States. "In fact, the very first subscription came in by credit card from the Netherlands," Rosenfeld recalls. "That woke us up and made us start thinking about foreign markets." Another Dutch subscriber, Hubert van Onna, CEO of an Amsterdam-based consulting business, says he visits BusinessTech weekly (reminded by the excerpts the entrepreneurs e-mail regularly to all subscribers) because it keeps him informed about U.S. business and economic issues.

Surprise No. 3: Some interactive features fly. Others don't. BusinessTech's publishers added a direct e-mail link on every column that allows readers to instantly send feedback to writers. And they do, frequently. But as at many other Web sites, BusinessTech's online forums have received only moderate traffic. "We found people in the business-to-business marketplace want immediate information," Rosenfeld says. "They'll be interested in looking at our editorial selection but not in necessarily taking time to chat or hang out."

Surprise No. 4: The Internet itself isn't the only or the best way to market a

Web site. True, some subscribers found BusinessTech through online directories, links or chance, meaning that sometimes "it works to throw a piece of bait in the water and let it sit," Goldsmith says. "On the other hand, in today's competitive world, you have to move the bait about, use a nicer lure." For that reason, he and Rosenfeld planned a multimedia approach and have begun promoting the site in traditional print-based advertising.

THE TWO INSIST THAT BUSINESS-Tech has no direct competitors. While they keep an eye on (free) business-oriented Web sites run by *Business Week* and *Fast Company*, among others, they're really interested in giving the consultancies a run for their money.

"We want to undercut those guys," Goldsmith says bluntly. By providing cutting-edge technology coverage and information on hot companies, "we can fill a niche for those people who don't want to spend \$20,000 for Gartner Group service or \$100,000 for a Goldman Sachs account."

For their next step, the partners want to put their debt-free creation on an open road to the big time, increasing subscrip-

tions by tenfold or more in the next few years. "Right now, we're a nice home-grown business," says Goldsmith. "We have some modest revenue. But if we

The two entrepreneurs were surprised to find that one-third of their paying customers live outside the United States.

want to build, if we want to put money away, if we want to take money out, if we want to make this into a nice revenue-generating business, we're going to have to let it be what it needs to be, what the market is demanding it's going to be."

For starters, the partners say, that means "professionalizing," hiring marketing specialists to help refine the BusinessTech site's content and develop new products, some of which may carry paid ads. (One plan being considered would let sponsors erect "mini-sites" on the BusinessTech server, free of banner ads but containing white papers and other information of value to visitors. It

means starting to woo investors. And it means re-examining and fine-tuning every editorial aspect of the BusinessTech site, which, while widely praised, was launched with no prior outside market research, aside from the partners' informally getting the advice of key informants.

"So many businesses that start out entrepreneurial and small die because the owners don't want to change the business model," Goldsmith says. "They like being king of the roost and they like having their own little pet project with their own ideas. We are very eager to grow the business and make it professional," even if that means giving up financial and, ultimately, some editorial control.

"This is a market in its infancy," Rosenfeld says of the Internet's use in business and commerce. "We're just at the very, very beginning of this odyssey. If we can grow the company in the way we anticipate, we can take advantage of that, of the same horizons we're looking at."

Managing Editor Anne Stuart can be reached at astuart@cio.com.

For Love and Money

The Mining Co. strives for pay dirt—gathering the expertise of people who dig all kinds of things

BY SARI KALIN

SCOTT KURNIT WANTS TO CHANGE THE WAY CONSUMERS find their way around the Web. And he's signed on more than 500 fanatics—plus one big bank—to help.

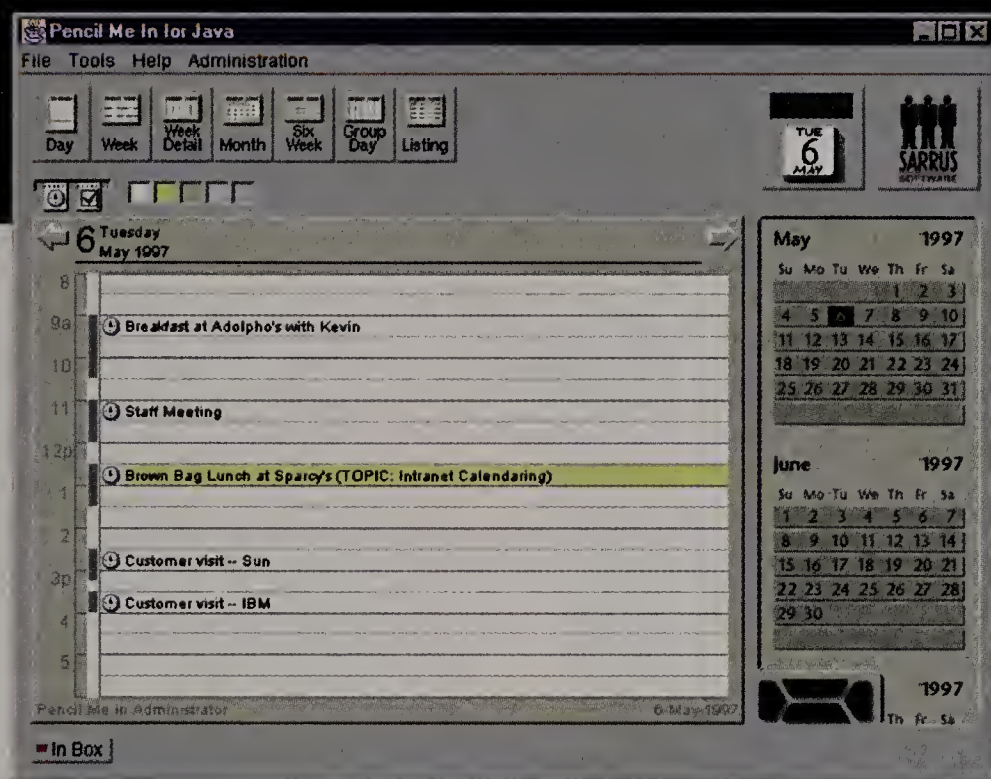
Kurnit heads The Mining Co., based in New York City, a Web site that tries to bring consumers the best of the Net with a human touch. The site is organized into 13 "hubs" under such headings as arts and entertainment, business, news and sports. Each site has many subsites, and each subsite is maintained by a guide—a real person who digs up material on a subject that rocks his or her world. Enthusiasts to obsessives, guides collect links and write features on anything from the intricacies of the human heart as does a heart surgeon in Madras, to the

intricacies of Harley-Davidson motorcycles from a self-described "saddle tramp" in Arizona. Click on an external link, and The Mining Co.'s navigation bar follows, making it easy to find the way back and hard to leave. With the planned addition of chat rooms and bulletin boards, The Mining Co. is trying to create something that consumers have traditionally turned to the likes of America Online to provide: community.

Certainly, there is no lack of sites offering Web directories, searches or communities; Yahoo, AOL.com and Geocities are among the Web's most popular sites. The Mining Co., however, which went live in April 1997, cites the passion and expertise of its more than 500 guides, as well as the site's and subsites' navigational and design consistency, as setting it apart. And Kurnit believes that The Mining Co.'s human touch can work for the Web's corporate citizens, too. He has struck a deal with Citibank to expand

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its Web site with Customer Communities—Mining Co.-style subsites that cover topics such as reducing your debt and use Mining Co.-trained Citibank employees as guides. Kurnit will try to sell other firms on building a “humanizing, organizing front end” to their sites, suggesting that they need one for the same reason The Mining Co. has built one for the Net.

“The Internet is a very unwieldy place with a lot of junk and a lot of good stuff, and corporate Web sites are a lot the same,” says Kurnit, a television and online services industry veteran who founded his first solo venture, The Mining Co., and its parent company General Internet Inc., in 1996. “We’re saying, ‘Welcome people at your front door with a person and welcome them with a person that meets their specific needs.’”

The Citibank deal is just one way Kurnit’s company plans to make money from helping people find their niches. Advertising, paid business listings and transactions are part of Kurnit’s business model, which he built on lessons from nearly 25 years in media. As a public TV program director in the 1970s, Kurnit found that people could become passionate about a subject and put tremendous effort into a production, “the only gain being advancing a cause.” Warner Communications, where he headed programming for the Qube interactive cable system, and Viacom, where he launched the first nationwide pay-per-view network, offered numerous channels to target viewers’ interests. His Prodigy tenure showed him the Net was the future and a cheaper way to build cable’s 500-channel universe. And at the ill-fated MCI/News Corp. Internet Ventures, where Kurnit led development for a planned Internet online service, he learned that Web ventures need to be lean to survive. “Financial returns weren’t going to come fast enough to support hundreds of staff members,” Kurnit says of the venture, which ultimately fell apart after MCI made a content alliance with Microsoft Corp.

The Mining Co., by comparison, is a lean virtual machine. Rather than fill a

payroll with professional writers, it looks for netizens with a passion and expertise in a subject—and an interest in sharing 40 percent of the site’s advertising revenues

They pick guides for MiningPrep training based on an application that includes a biography plus samples of Web content. They do not, as of this writing, ver-



Guiding Light: Scott Kurnit has 500 guides who work about 10 hours a week in return for a share of The Mining Co.’s still-meager ad revenues.

based on their subsite’s traffic (30 percent) and longevity and service contributions (10 percent). Half the company’s 60 staff members manage freelance guides over

ify applicants’ claims about their backgrounds, but they are considering doing this, at least for health-related sites. Even so, the application itself and the three

The Web site’s business plan, says Scott Kurnit, is generally rewritten every four months.

the Web, occasionally meeting some of them face to face.

Guides vary widely in background and expertise, although most can write HTML. They must be willing to invest about 10 hours a week on their site, says Olga Taller, vice president of guide training and support. All apply over the Web (2,500 applicants responded to the first call for guides in February). The Mining Co.’s staff digs through newsgroups and personal home pages to find others, or it asks its current guides for suggestions.

weeks of training weed out people who are not what they say they are, Taller says. Half of the applicants are rejected before training, and only about half the trainees graduate.

Guides learn how to develop content using editorial templates, giving the sites a consistent look and feel. They download the templates and upload the content via FTP; the server puts their content in a design container, which adds navigation and design elements. Class mentors check on the sites-in-progress, and use bulletin



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boards, chat sessions, newsletters and e-mails to teach the guides. Guides' sites must pass a quality control check before they can go live.

Staff editors oversee the content, but freelancers often surprise everyone. Take Princess Diana's death, which happened over Labor Day weekend, when editorial staff had a day off. The Mining Co.'s veterinary guide, who happens to live in London, started posting pictures and text of the Buckingham Palace scene. Other guides pulled together features on drunk driving, Net reaction to the deaths and Diana's pet project, the United Nations anti-land-mine treaty.

Stocks guide Mike Griffis, a business consultant who works at home, says he was drawn to The Mining Co. because he thought he could make some extra

Mining Co.'s help training Citibank guides, using the editorial template technology. It will also use customized content from The Mining Co. on nonfinancial topics—gardening or sports, for example—to help Citibank extend its relationship with its customers “to other parts of their life,” says Josh Grotstein, Citibank's division executive of global Internet/intranet programs. The deal makes Citibank The Mining Co.'s exclusive financial services partner. Citibank will also get financial compensation if The Mining Co. successfully sells corporate services to other firms.

Analysts say Kurnit's “human search engine” is a good idea, given the rapid rise in new users who need help making sense of the Web. Still, analysts have concerns about the business model. “You

The Mining Co. looks for netizens with a passion and expertise in a subject—and an interest in sharing 40 percent of the site's advertising revenues.

money. His site has frequently been in The Mining Co.'s top 25. Even so, given the Mining Co.'s newness, his site work is “not even close to paying for itself now,” he says.

Kurnit is closemouthed on Mining Co. revenues (except to note that is not profitable yet), nor will he reveal how much traffic it gets, although he is using distribution deals with the likes of AT&T WorldNet and Microsoft Corp.'s Microsoft Network to pump up the volume. The site has traditional advertisers. Amazon.com gives The Mining Co. a cut for every book sold through guides' recommended reading lists, and The Mining Co. plans to add a bookstore, to bring together the book recommendations. It also soon plans to add business listings—classified ads from companies that would not traditionally pay for a Web site banner. For example, a Manhattan dry cleaner could buy a listing on the Upper East Side site, and a ski manufacturer could take an ad on the ski vacation site. The business plan calls for profitability by next summer, Kurnit says, adding that the plan is generally rewritten every four months.

Citibank, which should have a prototype by year's end, is paying for The

do have a lot of new people online who need to find information and need to find it a lot more easily than going to the nearest search engine,” says Patrick Keane, an analyst with Jupiter Communications LLC in New York. “The question is, how reliable are the guides that they are using? Are these people experts? Also, how are they going to make money if they are giving so much of the advertising dollars away?”

Another analyst questions how long The Mining Co. can handle working with hundreds of guides on a quasi-volunteer basis.

“It's a logistical nightmare,” says Peter Krasilovsky, vice president at Arlen Communications Inc. in Bethesda, Md. “They're doing OK now with a limited number of forums but when it grows to full speed, who knows?”

Meanwhile, many search and directory sites are offering stock quotes, chat rooms and other bells and whistles to try to become full-fledged online services. Like The Mining Co., they all want to be the first page consumers visit, every time they visit the Web. Kurnit believes the site can achieve his goal—breaking into the Web's top 10—in spite of the stiff competition. Still, he concedes that

Top Stops

*The Mining Co.'s
25 most popular guides*

- Pregnancy
- Horseracing
- Webclipart
- Vgstrategies (video game strategies)
- Freebies
- Microsoftsoft (Microsoft software)
- Thyroid
- Mutualfunds
- Sickjokes
- Shareware
- Compsimgames
- Marktwain
- Stocks
- Daysofourlives (for fans of the soap opera)
- Birding
- Geography
- Windowsnt (Windows NT)
- Java
- Laptops
- Southernfood
- Profootball
- Desktoppub
- Space
- Busycooks
- Dancemusic



he is a late prospector at an already crowded gold rush.

“I wish we had started it three years ago, because then we would be a Yahoo today,” Kurnit says. “But we didn't.... You couldn't have. A lot of pieces had to come into place.” **CIO**

Sari Kalin is a senior writer at CIO. She can be reached at skalin@cio.com.

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Name Calling

Wrestling over domain names is the latest corporate contact sport. Who will referee?

BY FRED HAPGOOD

ONE OF THE DOWNSIDES OF LIFE IN THE GLOBAL VILLAGE is that any lawyer in the world can reach out and whack you. Last January, Sally Tate, joint managing director of a London-based computer services consultancy called Prince PLC (www.prince.com), received a letter from an American attorney for Prince Sports Group Inc. (www.princetennis.com), a tennis racquet manufacturer based in Bordentown, N.J. PSG's lawyer demanded that Prince PLC cease using the .prince domain name forthwith, surrender it to PSG and agree never to use the name "prince" in any new domain name. Tate was, she says, extraordinarily surprised by the warning.

Had she been a trademarks lawyer, she would not have been. According to Network Solutions Inc. (NSI), which works under contract with The National Science Foundation to monitor domain registrations and resolve such disputes, there have been more than 1,300 trademark conflicts since NSI's domain name dispute policy was put in place in 1995.

Trademark disputes are not new of course, but domain name conflicts on the Internet can be particularly intense. Offline, such issues were defused by allowing companies in different industrial sectors and different nations to register the same mark. Online, the Internet collapses both of these insulating principles. According to a report posted on the Prince PLC site, 100,000 companies worldwide use prince in some way as a corporate or product identifier. In theory, they all have some kind of claim to the prince.com domain name, but only one shall have the right to use it.

Squabbling over .com real estate has become so inflamed that many onlookers fear it might inhibit the growth of electronic commerce, or worse, lead to the fragmentation of the Internet. The disputes raise disturbing questions about the privatized Internet's ability to govern itself.

"The most significant point for me," says Tate, "is that most of the management and administration of the

Internet is currently undertaken by private individuals and organizations. These people are not truly accountable to anyone for their actions. The Internet cannot continue to be run in this way."

Even NSI, one of the prime beneficiaries of the process to date, wants the government to step in to protect the process.

Internet culture being what it is, suggestions for reform are thick on the ground. Most revolve around establishing some number of new top level domains or TLDs (a TLD is the identifier at the end of an Internet address, such as .com and .org). The hope is to stem the rush to .com. In a white paper by Don Telage, NSI's senior vice president of Internet relations



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- Removing barriers to end-user and IS productivity
- Cost-effective solutions for wide-scale deployment
- Leveraging desktop, client/server and web environments

Agenda

Welcome & Opening Remarks

Frank Chisholm

Innovations in Information Access

Geoffrey Moore, Consultant and Author of Crossing the Chasm and Inside the Tornado

- Patterns in technology adoption
- Different strategies at different stages

Raising the Corporate IQ

Dr. Larry Harris, Founder, Linguistic Technology Corporation

- Historical pitfalls
- The spectrum of information-access solutions
- Practical applications - progress to date
- Strategies for success

Removing Barriers to End-User Access
& IS Productivity: Industry Roundtable

Bob Procaccini, Director of Strategic Technology Development, American Express Institutional Services
"Web Data Warehousing"

James McGlaughlin, Systems Analyst Deere & Company

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and special projects, NSI has suggested licensing large numbers of competing registries, each with a proprietary set of TLDs. In the example above, the Prince dispute might be resolved by the British company's registering with one registry under prince.networkservices and the New Jersey Prince under prince.sportinggoods. Each registry would have its own conflict resolution policies and would compete for business partly on the appeal of those policies.

NSI thinks that at least in the short run some government authority needs to immunize the process against lawsuits. "The burden of Internet decisions and the potential legal exposure are too great for any one person or small group," Telage writes. "It is not unreasonable that the

new TLDs, at least to start with (.firm, .store and .arts are examples of what they have in mind), the emphasis was on sharing control of all TLDs through an organization that was both international and nongovernmental.

The IAHC/IPOC report is every bit as concerned with the protection of trademarks as it is with governance. Applicants would be required to specify a rationale for a domain name instead of being free to register any text strings at all. (The current system has allowed so-called domain piracy, the practice of reserving long lists of names in hope of reselling to companies that need that mark.) Applicants would have to submit to the jurisdiction of the courts in the country where the domain registrar was located, as opposed

unteers with no authority to decide anything. Several months of cannonading in all directions ensued.

NSI's contract with the NSF will expire next year. In theory, this will give the NSF the means to redesign the process, though no clear consensus currently guides them (and even the NSF's lines of authority are cloudy). NSI has announced that it considers the .com registry proprietary and plans to hold on to it whatever happens. Recently, the White House announced it had formed a committee to examine the problem.

Still a third position holds that these parties are arguing over nothing of lasting significance because the domain name/trademark conflict is bound to evaporate even if nothing is done. There are millions of companies in the world (more than 5 million in the United States alone) and tens, maybe hundreds, of millions of product and service brand names. Neither the present system nor any imaginable reform can possibly accommodate more than a tiny fraction of these corporate identifiers, in the sense of giving users an intuitive association between a domain name and a company or product.

Furthermore, the cost of filing actions for domain name trademark violations is likely to climb beyond the means of all but the richest companies. More than 200 jurisdictions exist in the world, each with its own twists in trademark law, and the number of possible infringements is, if not infinite, very large. Is www.microsoft.com a violation?

As these developments evolve, fewer and fewer people will expect or even trust any association between a domain name and a corporate identifier. Domain names will become like telephone numbers: While some companies do try to get numbers that punch out a company name, people do not worry about lawyers laying claim to their number string. From the point of view of this analysis, the worst thing people could do is impose radical changes. Those changes might affect the hard-won technical robustness and speed of the Internet to no purpose. **CIO**

Fred Hapgood is a Boston-based freelance writer. He can be reached at hapgood@pobox.com.

Squabbling over .com real estate has become so inflamed that many onlookers fear it might inhibit the growth of electronic commerce.

sponsorship of the U.S. government continue through these turbulent times."

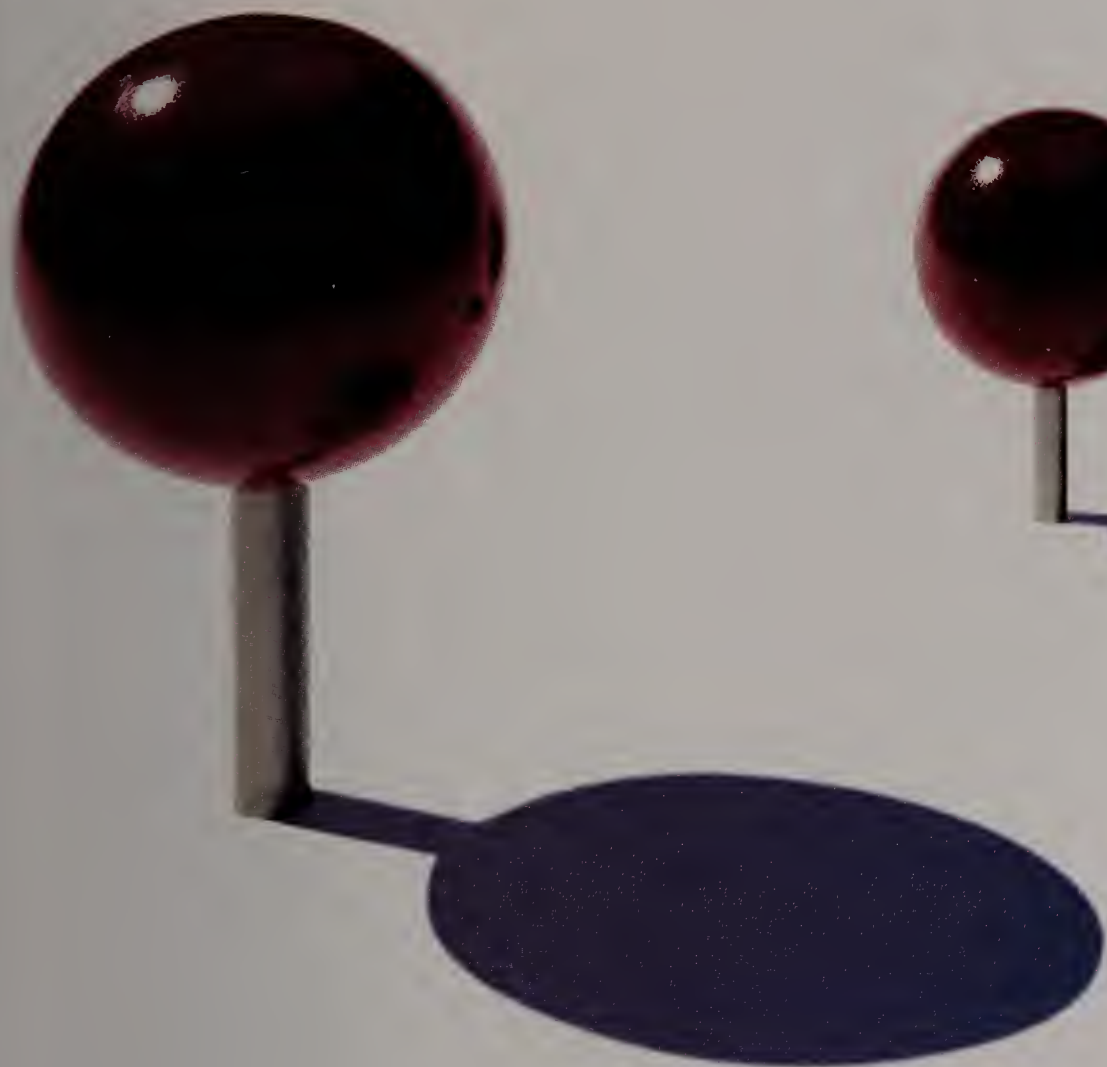
Perhaps the major objection to the NSI plan is that other TLDs exist now, notably a group of national identifiers (.us for the United States, .ca for Canada, .jp for Japan, etc.), and interest in them has been slow to develop. The suffix, .com, seems to have won out as the real estate of choice. As Tate points out, .com translates easily because the word for commercial or commerce begins with *com* in many languages. The globalization of commerce on the Net makes this an important advantage.

Last February, an alternative was advanced by a volunteer group called International Ad Hoc Committee (IAHC)—now interim Policy Oversight Committee (IPOC). Its report began with the declaration that TLDs were by nature not proprietary: "Internet top-level domain space is a public resource and is subject to the public trust." IPOC envisaged administering this trust via a group of 28 registrars distributed around the world, all sharing the same database. The registrars and databases would be governed by a Council of Registrars operating as a nonprofit based in Geneva. While the IAHC/IPOC report did propose adding

to taking protection behind random jurisdictions anywhere on the globe, thus guaranteeing a venue for trademark infringement litigation). Applications would be published on a Web site, giving trademark owners and search firms time to learn about conflicts. There would be a hierarchy of nonjudicial dispute-resolution mechanisms, including online mediation and arbitration. Finally, administrative challenge panels would be set up to protect international marks—marks that in the view of the panel deserve such a high degree of protection that they could never appear anywhere in any other domain name except in that of the owner. This protection would even extend to the second or third level of a domain name (i.e., if Microsoft Corp. won approval of such a mark, no registry could approve microsoft.napkins.com or microsoft.contactlenses.com).

Politics as Usual

As usual with Internet debate, both plans were immediately drowned in ridicule. The NSI idea was derided as a bald-faced grab for monopolistic control over the lucrative .com registry, and the IAHC/IPOC plan was mocked as a giveaway to the intellectual property industries and a coup by self-appointed vol-

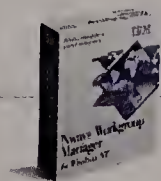


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A woman with dark, curly hair is smiling and standing on a wooden deck. She is wearing a dark blazer over a patterned top. Her hands are resting on the wooden railing. The background is a large, dark tree trunk and dense green foliage, with sunlight filtering through the leaves, creating a dappled light effect. The overall mood is professional yet relaxed.

Deborah Erickson, who is responsible for coordinating and building sites for internal Weyerhaeuser customers, tries to educate clients on the finer points of content management.



NEW GROWTH

BY ALEX FRANKEL

At Weyerhaeuser, a carefully tended intranet branches out, hoping to win the hearts of business-minded leaders

AN HOUR EAST OF WEYERHAEUSER CO.'S HEADQUARTERS IN FEDERAL WAY, WASH., IS the rustic enclave of Enumclaw, site of one of the company's 28 sawmill operations. Each day, 100 truckloads of logs arrive at the mill where they are hewn into lumber. But at Weyerhaeuser, the days of Paul Bunyanesque logging are long gone. Before each log arrives at the mill,

scores of foresters and loggers have had a hand in its cultivation and harvest. And at Enumclaw, high-tech laser scanners position logs to guarantee the best cut.

New technology helps production in many other ways. Results from each day's cutting, such as the number of board feet and type of wood harvested, are fed into a database and linked to daily reports, which are published on the mill's home page and linked into Roots, Weyerhaeuser's growing intranet. Increasingly, at sites

like Enumclaw, intranet-based applications enable the \$11 billion forest products company to share real-time production, environmental, personnel and safety data with workers at locations all over the Northwest.

At one pulp mill in Canada, the IS staff converted thousands of quality control documents into an electronic format that is accessible on the intranet, fundamentally changing the way procedures are followed and eliminating the use of outdated printed manuals (see

Reader ROI

READERS WILL SEE HOW WEYERHAEUSER CO. has established an intranet in a grassroots fashion and is dealing with issues such as

- ▶ Content organization
- ▶ Return on investment
- ▶ Companywide buy-in

"The Trickle Up Theory," Page 40). Out in the forests, geographical data and maps are readily available to foresters, engineers and loggers via the intranet. By downloading and altering maps, then uploading them for common use, those in the field have ready access to up-to-date harvest maps. The intranet is even helping members of Weyerhaeuser's year 2000 team get a better handle on the software they need to survive the millennium. The intranet helps software developers share progress on year 2000 conversion and post information about best practices and the latest news. As a result, the team keeps accurate track of conversion efforts, thereby minimizing the chance of doing redundant work.

"At Weyerhaeuser we are not high-tech, we grow trees," says Deborah Erickson, a senior analyst in Weyerhaeuser's application services department. But like most large corporations, Weyerhaeuser is becoming more high-tech every month. Roots is the

The Weyerhaeuser Intranet At A Glance

8,000 people on Internet e-mail

6,500 employees with
Internet
Web browsers

6,500 employees on intranet-
based applications

40 Web servers

Authoring Tool: Microsoft
Front Page 1997

Server: Microsoft NT

Browsers: Microsoft Internet Explorer
and Netscape Navigator

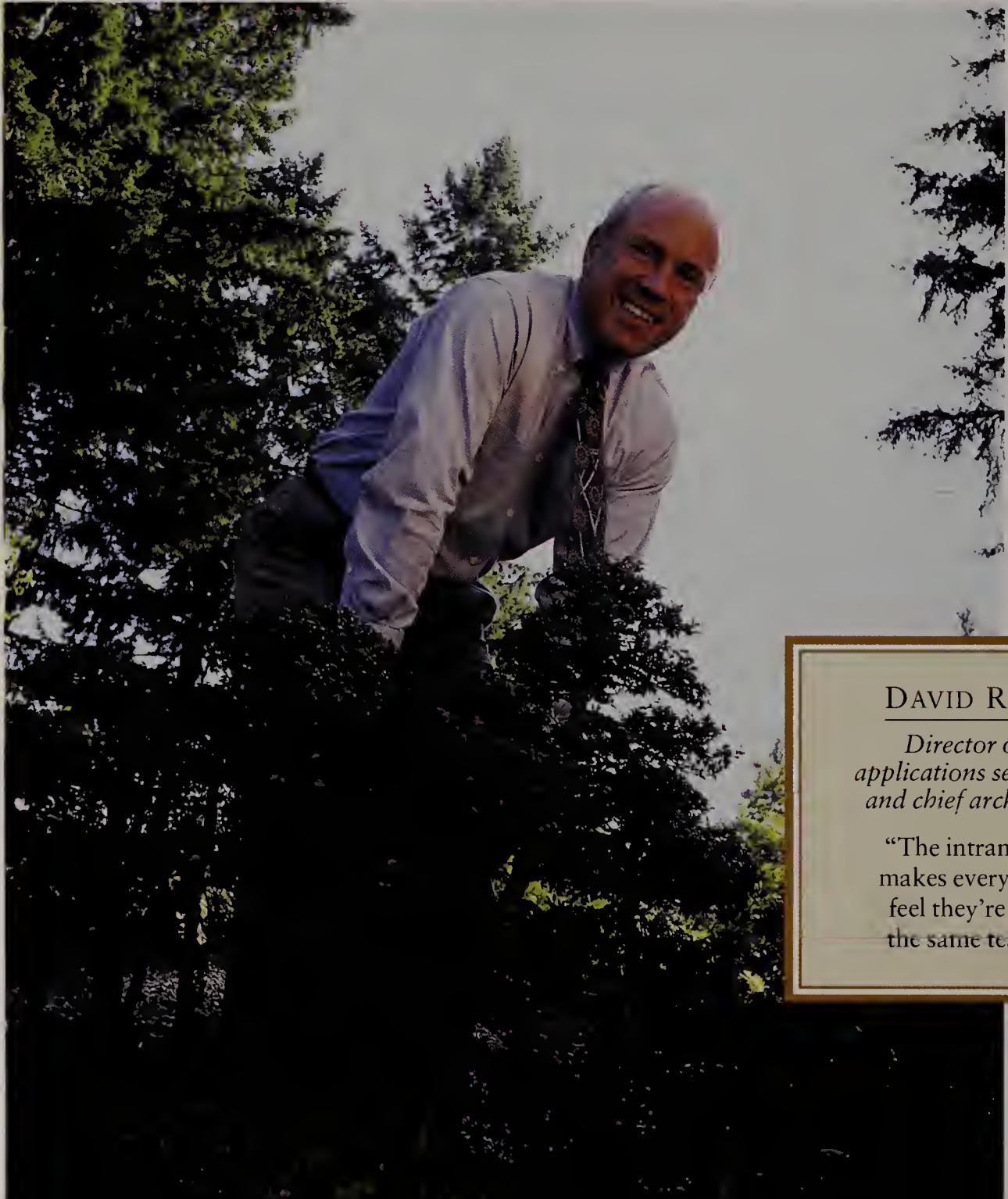
corporate home page for Weyerhaeuser's many interconnected Web sites, and around the company, the name is used to refer to the entire and rapidly expanding intranet. Roots began as little more than a companywide table of contents, providing online directions to the growing ranks of the company's online community. Today, employees can track down personal information, such as 401(k) balances, and more and more business units, such as Timberlands and Wood Products are linking their data into the intranet so that information is widely available and easily accessible. Before the intranet was in place, most of such information could only be found in cumbersome three-ring binders that Weyerhaeuser typically updated on a quarterly basis.

Now the binders are disappearing, and the money saved this year on that and other communications materials adds up to \$150,000.

Roots is also intended to simplify distribution models, speed order processing and decrease customer support staff. New distribution models will eliminate the circulation of redundant and outdated materials. The intranet will reduce reliance on support staff by letting employees directly access information such as human resources data and internal job listings. All of these capabilities will save money.

The intranet will do something else as well.

"This company is team-oriented," says Clifford Hall, vice president of information technology. "The intranet is really



DAVID REA

*Director of
applications services
and chief architect*

"The intranet
makes everyone
feel they're on
the same team."

going to help foster that teamwork notion because it allows people to get together in another way, irrespective of geography.”

Before it does all of the above, however, Weyerhaeuser’s intranet has a few hurdles to leap. Hall admits that it has yet to garner mainstream support throughout the organization. To date, Weyerhaeuser’s intranet initiatives have bubbled up from the users working in conjunction with the IT department. Such a grassroots approach has succeeded in introducing intranet applications to pockets throughout Weyerhaeuser, but a widescale top-down implementation isn’t there.

“These systems are built not because of anything that IT does; they are built because business managers talk to business managers and generally get excited about what they are able to do,” says David Rea, director of application services and chief architect.

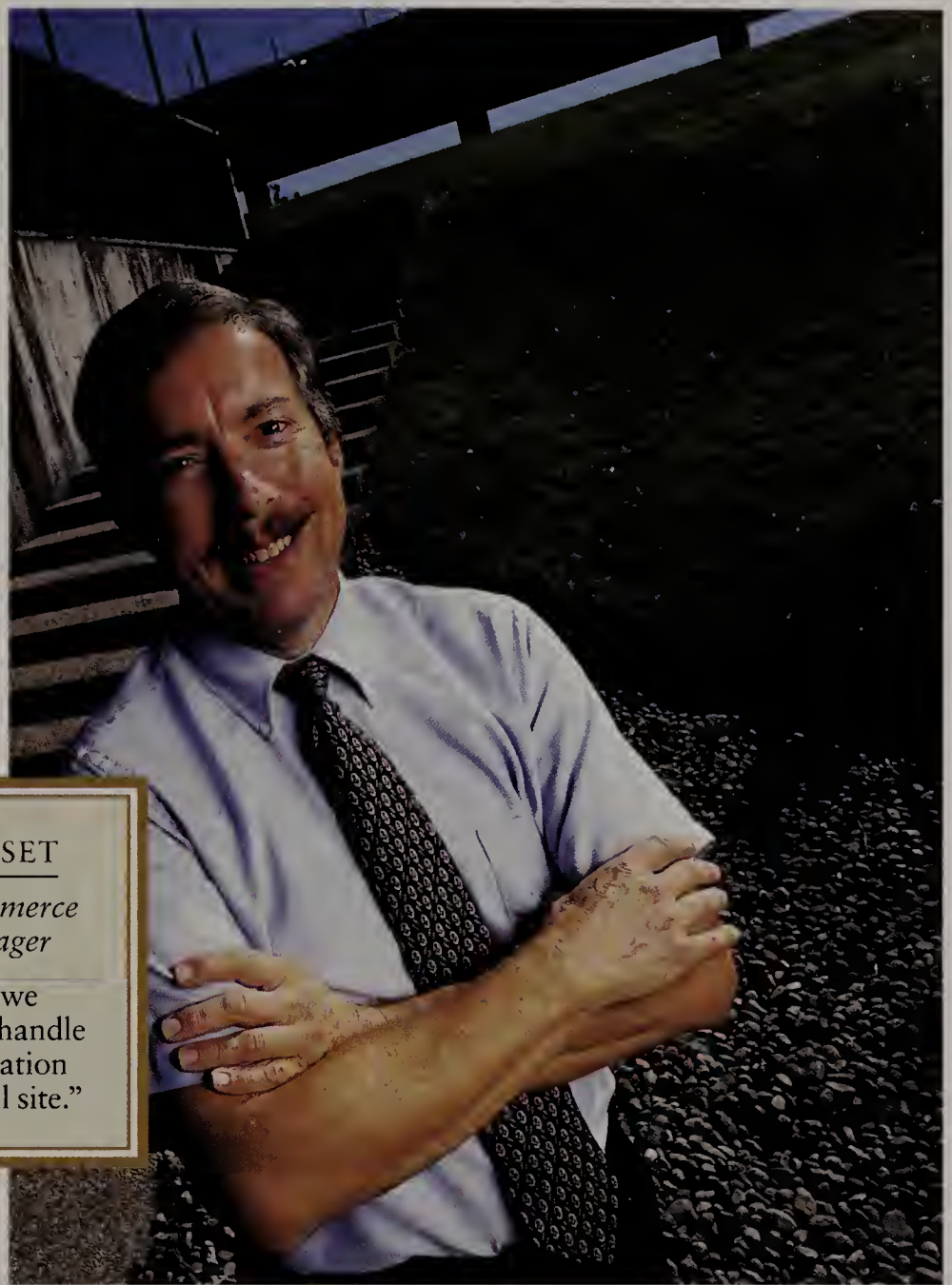
The roots of Roots started growing five years ago, when Hall took the reins of Weyerhaeuser’s IT department and began a systematic push to standardize the company’s desktop infrastructure. Back then, the company’s diverse business units used as many as 21 different hardware platforms and network protocols, certainly not the kind of infrastructure that could support seamless communications. Hall initiated a five-year standardization program dubbed the Weyerhaeuser Open Network (WON), that involved connecting 400 sites in the United States and Canada.

Four years ago, an IT manager at Weyerhaeuser installed an early version of Mosaic loaded with NCSA freeware on a spare server and scribbled

DON HANSET

Electronic commerce services manager

“We realized we needed to get a handle on the organization of our internal site.”



some HTML code together before showing a prototype home page to colleagues. Since the Roots home page official debut in July 1996, intranet technology has grown at a steady if not spectacular pace. In March of that year, Roots listed 28 sites; by August 1997, the number of sites indexed on

Peer Pressure

FOR DON HANSET, WEYERHAEUSER Co.’s electronic commerce services manager, many valuable lessons came from participation in Project Intranet, a consortium of Seattle-area companies that got together once a month to share their intranet joys and sorrows. Web developers from Boeing, PACCAR, Starbucks and Microsoft had a great deal to say. After six months of meetings, Hanset reviews his lessons and his progress:

1. Content management.

Initially, the hierarchical organization of Roots mirrored that of Weyerhaeuser. In redesigning the site, Hanset and the intranet team are organizing information based on how subjects and topics relate to one another.

2. High-level support:

Says Hanset: “We have not made as much progress [in this area] as we would like.”

3. Access management and security issues.

Hanset is still debating whether Weyerhaeuser should give open access to every employee or restrict access in several ways.

4. Tool evaluation and standardization:

Hanset has moved quickly to institute a company-wide process for standardizing on new technology.

—A. Frankel

Roots grew to 105. Weyerhaeuser is using more than 40 intranet servers that publish 8,000 Web pages, and Roots receives about 3,600 hits per day. The same internal e-mail system connects 16,000 employees.

What was once a grassroots project has evolved into a more formalized process. A dedicated staff of four people in the application services department is now responsible for consulting with business sectors to build Web sites and ensuring that business units adhere to certain design structures. (For example, each page must contain a mechanism for feedback and a revision date.) The Web developers are also responsible for continually tweaking Roots so that its interface remains intuitive and easy to use.

Despite such formalization, the spirit of the seminal bottom-up growth persists, and it is evident in

the "trial-and-error" approach of many Web-based initiatives. Early on, the team realized that the organization of Roots, which originally was an alphabetical listing of home pages, would not suit the burgeoning number of Web sites published throughout Weyerhaeuser. As home pages were added, Roots began to look like what Don Hanset, Weyerhaeuser's electronic commerce services manager, calls "a library where everyone just dropped the books into a big pile." It simply wasn't working.

Hanset and the development team didn't want Roots to resemble the disorganized realm of the Internet. So they identified three categories of use and information: static publishing, dynamic (or collaborative) publishing and Web-enabled business applications. By categorizing content and use, the team could gauge the level of skills that users needed to navigate the various categories.

As Roots has grown, the Web development team has become more end-user focused. An early navigation structure that was based on five business sectors was scrapped in August of this year when user surveys revealed that even the most basic information wasn't accessible without a thorough knowledge of Weyerhaeuser's hierarchical organization. In its place, Weyerhaeuser adopted a navigation system based on subject headings. To facilitate searching, a Web crawler will be added next. The team also plans to create an intelligent identifier based on each user's personal profile. Registered users will be notified when relevant information changes. When a manufacturing process changes in a mill, for example, all employees in the Timberlands divisions will be notified via an e-mail message or push technology. The new function will help managers stay up to speed and will eliminate the need to print and distribute hundreds of pages of hard-copy documents each year.

Hanset says many of his ideas came from his participation in Project Intranet, a consortium of IS managers from companies in the Puget Sound area (see "Peer Pressure," Page 39). Many other ideas came from interaction with users. Before building Web sites for business units, for instance, Deborah Erickson spends time with users to determine who will be the audience

The Trickle Up Theory

*From a place called Grande Prairie:
a grand idea*

MANY IDEAS FOR INTRANET-based applications have filtered back to the Internet services department from places that are far from corporate headquarters. Early in 1996, one of the mills in the Timberlands division led the charge into the intranet by merging Web development with document management.

Weyerhaeuser's Grande Prairie pulp mill, located in northern Alberta, Canada, produces 300,000 air-dried metric tons annually of bleached Kraft pulp used in tissue and towel paper and specialty applications.

Two years ago, the IS department was looking to move into Web development as a way to put documents online. At the same time, the quality assurance team was trying to improve its document management. Sandi Ellert, project manager at the site, and others, decided to put the two technologies together, and the result, an intranet dubbed Honeycomb, contains online versions of paper-based process manuals.

With the old manual-based pro-

cedures, an employee might test the moisture content of pulp using outdated guidelines. Today, current testing guidelines are readily accessible, so quality control managers can perform the right tests before products are shipped to customers.

In addition to reducing the number of three-ring binders, Honeycomb enables those employees who use the documents to suggest changes via e-mail to a central procedure administrator. In the past, the printed documents provided little incentive for offering suggestions because they couldn't be changed quickly.

Honeycomb is also linked to Roots, Weyerhaeuser's corporate home page, giving the Grande Prairie employees a window on the happenings at headquarters. And Ellert points out that Grande Prairie does not need to add more personnel to manage its growing document library. Teaching current employees how to upload documents to the Web and navigate the intranet is all that's currently needed.

—A. Frankel

for the site and who will maintain the site. "We want to make sure that the business units each deal with content management," she says. By asking targeted questions, Erickson aims to get a handle on user needs as well as educate them about the "care and feeding" of their Web sites.

Many of the innovative applications available via Roots were developed by IT staff working closely with users in the field. Working with colleagues, Nancy Kumbalek, a LAN and PC manager with the Cascade Timberlands division, tested the intranet concept by adding the existing Sunrise Report and other production reports to a home page they created for area users to access. These reports provide reams of statistics about each day's harvests, including data about the length, volume, diameter and species of trees harvested. Through the intranet, Sunrise Reports are now released every day at 5 a.m., enabling a harvesting team to better plan their days in response to changing needs.

Suppose, for example, that a Weyerhaeuser customer places a large order for hemlock lumber to be cut at a certain mill. On the first day of the harvest when logs are sorted, spruce logs are mistakenly included in the delivery. By receiving the Sunrise Report (which contains data about the previous day's harvest) the next morning, crews in the field will be notified if an error has occurred and they can change their harvesting plans for the upcoming day accordingly.

Employees in the ranks are doing more than originating ideas for the intranet. Sally Hass, who works in Weyerhaeuser's Corporate Employee Relations Department, is helping Roots developers redesign the site. Hass is working on an intuitive interface that she calls the "Me Icon," which will contain personnel information that is customized for the individual. For example, if an employee wants to check out information on retirement planning, links to relevant information on pensions, seminars and even a retirement calculator should be easy to find.

From Hanset's perspective, having grassroots support for the intranet has pros and cons. "I think we get a fair amount of experimentation," he says, "but we do not get large-scale innovation."

So far, only 6,500 employees out of a corporate total of about 40,000 have browsers installed for access to the intranet. One of the reasons for the slow adoption is the wait-and-see approach that the IT department applies to new technology.

Before there is companywide buy in, says Fred Huteson, a Web/Internet consultant who works closely with Erickson, there must be sponsorship from management, something that will come only with demonstrated business value.

FRED HUTESON

Web/Internet consultant

"A lot of the future success of the intranet must be taken on faith."



"Admittedly, the ROI is hard to show at this point," says Huteson.

Rea echoes that sentiment. "We are being very careful about how to understand the business value of all of these things," he says, although he admits it's a tough task without definitive ROI calculations. Different people at Weyerhaeuser have different ways to measure the value of Roots. For workers at a particular site, says Rea, value comes from their own empowerment, while from a management perspective, value comes from a more efficient way to disseminate information.

Before the full benefits of the intranet can be appreciated, more people must be given access, team members say. The catch is, those people won't get access unless they demand it, and they won't demand it unless the full benefits are apparent.

"There is some point at which we can take a more assertive role," says Rea, who believes that time will come when demand for intranet applications reaches a fever pitch. "We think we are very close." **CIO**

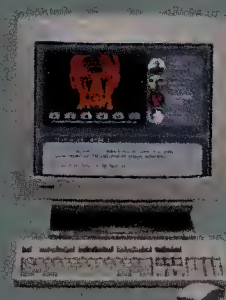
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Online databases and Web-powered bill collectors help companies track down deadbeats quickly and inexpensively

BY JOSEPH E. MAGLITTA



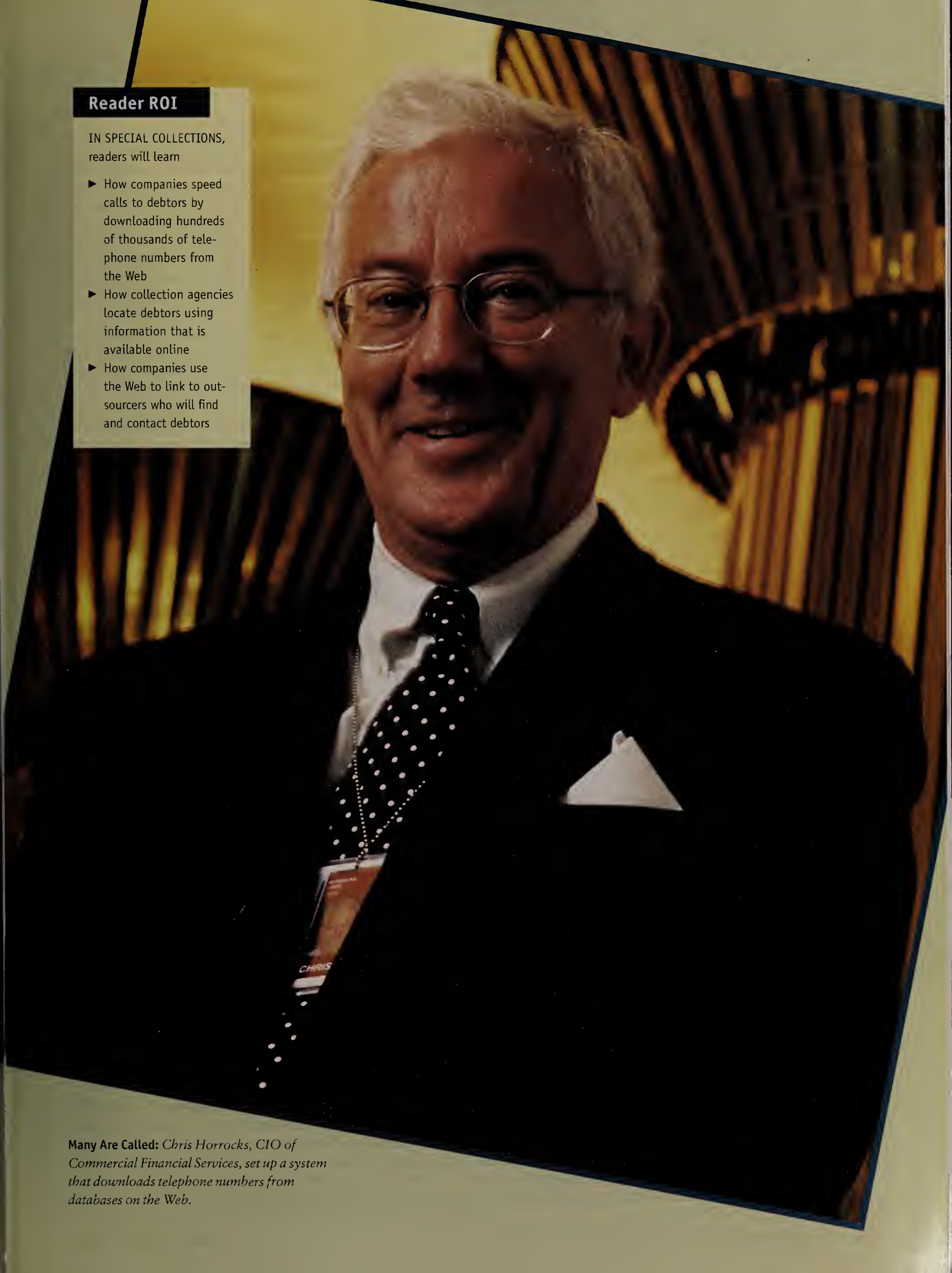
COMMERCIAL FINANCIAL SERVICES (CFS) OF TULSA, OKLA., THE NATION'S LARGEST buyer and collector of credit card debt, owes a great deal to Web technologies. The \$1.5 billion company, which buys uncollected credit card debt from major banks, is using the Web among other methods to track down those deadbeats politely referred to as "non-payers." Unlike the objects of these searches, the Web is quick to pay off, cutting the time it takes to locate nonpayers and increasing the chances that they will be found.

Until August 1997, finding current phone numbers for skipped debtors was a significantly more laborious process, says Chris Horrocks, Commercial Financial Services CIO. Account officers would telephone credit bureaus and retailers. Then they would manually enter the debtors' telephone numbers on the system and start dialing them directly. Horrocks' new system, running software from UBICON of Santa Ana, Calif., uses the Internet to automatically download hundreds of thousands of telephone numbers directly from Equifax, Transunion, Experion, IDS and five other credit reporting and information agencies. Screening algorithms running on seven Compaq servers select the most recent number from multiple listings. These are passed via the company's network to predictive dialers, a bank of special-purpose computers that can make up to 600,000 calls

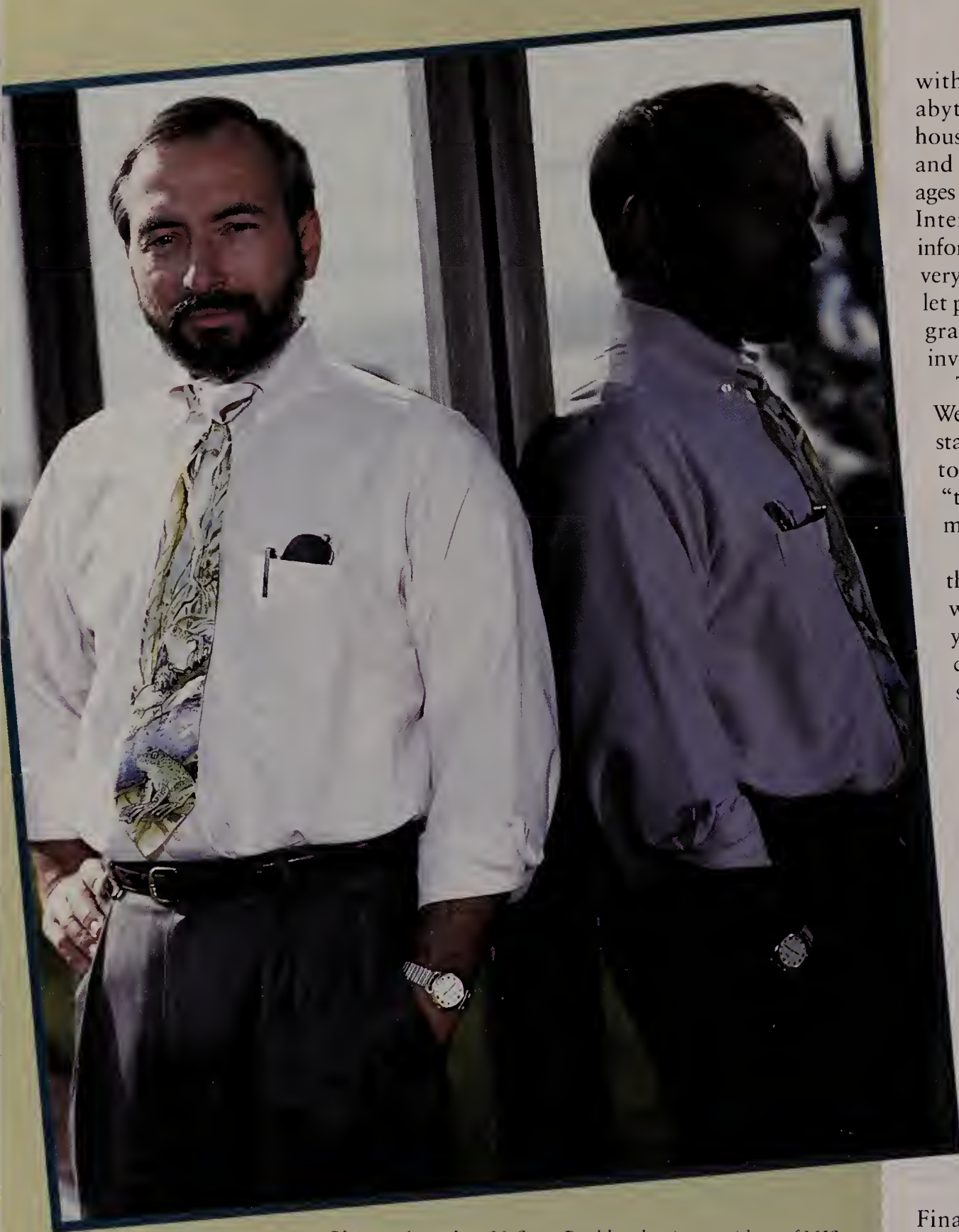
Reader ROI

IN SPECIAL COLLECTIONS, readers will learn

- ▶ How companies speed calls to debtors by downloading hundreds of thousands of telephone numbers from the Web
- ▶ How collection agencies locate debtors using information that is available online
- ▶ How companies use the Web to link to out-sourcers who will find and contact debtors



Many Are Called: *Chris Horrocks, CIO of Commercial Financial Services, set up a system that downloads telephone numbers from databases on the Web.*



Distance Learning: N. Scott Burkhardt, vice president of MIS at the collection agency Wakefield and Associates, helped build an intranet that lets staffers in far-flung offices request reports and update information in an internal data warehouse.

a day. When the rare debtor picks up the phone (only 10 percent of the calls are answered), his or her credit record automatically pops up on the account officer's PC screen, and the caller is ready to talk business. The dialers eliminate time previously wasted in dead-end calling in an account officer's day.

"A dialer can serve a thousand calls a day to an account officer's screen," says Horrocks. "In the past, it was 150 maximum done manually." That's an impressive increase, but Horrocks thinks it's only the beginning of the efficiencies that his industry will reap from Internet technologies. CFS recently installed a cluster of four Compaq 7000s, each

with 4GB of RAM and a total of 2 terabytes of storage to accumulate a warehouse of data downloaded from the Web and other sources. The firm, which manages \$10 billion in debt, is hoping to use the Internet to transmit encrypted account information to and from client banks. And very soon, says Horrocks, a Web page will let private investors in the company see a graphical, personalized report on their investments.

Thanks partially to the efficiencies of Web technology, CFS expects to expand its staff over the next two years from 2,600 to 10,000. "We think," Horrocks says, "that the Internet will provide us with a major source of inbound information."

Tracking people down is one of the things that the Web does particularly well. Since the Internet took off a few years ago, many Web users have received unwanted e-mail from someone seeking to reunite with a high school flame who happened to have the same name as the recipient. The surfeit of online databases, which include such information as telephone numbers, addresses and even travel histories, makes it an ideal tool for finding people—including those who don't want to be found.

While many high-tech sleuths have attracted the ire of privacy advocates by selling everything from telephone records to medical records, many legitimate bloodhounds have put the Web to good use tracking down people who will not pay their debts.

Web technology today is helping some of the foremost collectors of debt, such as Commercial Financial and Nationwide Credit, the largest collection agency in the United States, which now gets half of its clients via the Web, and some smaller companies that use the Web in unorthodox ways. Delinquent debtors at Video Wasteland (www.slaughter.net), for example, get the

subtle treatment you'd expect from a company whose vault of video classics like *Blood Shack*, *Sex Demons*, *Drillbit*, *Boneless* and *Don't Torture The Duckling* let it boast of "The Largest Rent-By-Mail Horror, Exploitation and B-Movie Selection in the United States."

"Pay up, you deadbeats!" screams the Berea, Ohio, firm's Deadbeat Alert Web page. Beneath a row of miniature skulls appear the names and addresses of people who, after three notices, failed to pay for video rentals or sales. "We are damn tired of being nice," the webmaster informs visitors, "and would like the payment owed to us."

The best-known deadbeat-hunting Web sites are those in states such as Connecticut and Florida, which post names, identifying information and photos of deadbeat dads. That application took a giant step forward last month, when the federal government began operating a computerized directory of every person hired by every employer in the country, for the stated purpose of helping federal and state investigators track down parents who owe money to their children. The biggest ROI, however, will come from tracking those people who are responsible for the country's \$1.2 trillion in outstanding and delinquent consumer installment debt. (See "A Load Owed," Page 49.) Add delinquent health care, student loans, tax and other government bills, child and family support, and the \$25 billion recovered last year by U.S. collection agencies begins to look like small change.

Predictably, as the Web gathers databases and technological abilities, a new Web-enabled collection industry is gathering strength.

"We're just in the early stages," says Marvin Kaulkin, president of M. Kaulkin & Associates Inc., a Bethesda, Md., consulting firm that publishes an annual report on the industry. Kaulkin predicts that industrywide consolidation and continued pressures to outsource noncore business activities will give birth to a new type of Internet-ready "receivables management" industry.

"With fee pressure continuing," he says, "greater efficiency, use of technology and controlling expenses will be vital to remaining competitive."

The most popular applications use the Web to locate people, either finding vanished debtors or validating credit applicants' addresses and telephone and Social Security numbers. That type of Web-based resource can be as basic as a search engine such as Yahoo or directories such as Bigfoot and BigYellow, which compile the information of several telephone books in one huge database.

But because those sources can take half an hour to locate potentially outdated information about a single person or company, they are best suited for casual, low-volume searches, such as tracking down long-lost relatives. More industrious efforts, such as those required by many small businesses, are often better served by logging on to one of the many commercial debt collectors who have put their services online. Fill in a CGI form online, and for as little as \$25, firms such as Privacy Inc., Nationwide Information Research Associates and American Detective Agency will start sniffing the electronic trail of your deadbeat. The cost (up to \$300) makes this a better choice for single searches.

Merlin Information Services of Kalispell, Mont., recently began offering its CD-ROM collection on its Web site. The company's so-called "Ultimate Weapon" provides free searches of the master index of California public record databases. You put down a \$100 deposit and pay only for data entered since the last CD update.

Another notch up on the sophistication (and cost) scale are services that provide a real-time and batch access to multiple online public record databases. A pioneering example is Real-Time Access Online, a gateway service of Integrated Database Software Inc. in Villa Park, Ill. An industrial-strength son of

Electric Shock

E-mail dunning is cheap, fast and a very bad idea

Many companies recently empowered by the Web have figured out that e-mail is the fastest and cheapest way to send a dunning notice. But it may not be the best way.

While it is legal to send dunning e-mail if your company is the credit grantor or you don't live in one of the 22 states and the District of Columbia that require companies collecting their debts to follow the laws for third-party collection agencies, the American Collectors Association Inc. (ACA), a national trade group, cautions against it.

"We're suggesting that [ACA] members avoid e-mail until we can get more information on it," says Carleton Fish, vice president of government relations for the trade group based in Minneapolis. Fish also warns against the practice of posting the names of debtors on a corporate Web site, "For collectors to issue a list of delinquent debtors would clearly violate the [Fair Debt Collection Practices Act] regulations."

Ted Smith, executive director of the 340-member International Association of Commercial Collectors, points out that commercial accounts, unlike consumer accounts, are not regulated by the federal government.

The ACA is hoping to schedule two seminars before the end of the year to discuss with members the issues surrounding collection agencies' use of e-mail.

"We hope to get an official statement from the Federal Trade Commission," says Fish. Until then, he suggests the best guidelines are the ACA's code of ethics and compliance with the 1977 federal Fair Debt Collection Practices Act. But most agree that even a formal FTC advisory opinion would be non-binding, and that the real limits of e-mail will be duked out in the courts.

—J.E. Maglitta

the free SearchAmerica Inc. service that launched in 1995, Real-Time Access Online provides compiled and real-time telephone, property, bankruptcy and other data and access to major databases like TransUnion, Axiom, CarFax and Banko. User access to the IDS intranet and databases is gained via tel-net ports, dial-up lines or CPU-to-CPU.

Some cybercollectors will even let you submit a list of deadbeats using their Web page. One such company, Arnold, Becker & Stevens Ltd. (ABS), a three-year-old New York City-based global collections firm, offers its "No Excuses" service as an adjunct to faxing and calling. For 25 percent of the amount collected, ABS will take the CGI form you submitted, call to con-

TRACKING DEBT

firm your order and start tracking down the people on your list.

Another Web-enabled solution to the collection problems of larger and geographically dispersed corporations is offered by the American Collectors Association Inc. to its own members. Launched in June 1995, ACA On-Line serves as a multipurpose site for collection agencies and credit grantors who belong to the nation's largest consumer debt association. Member companies use the Internet to search 11 different commercial databases for names, addresses, phone numbers, neighbors, Social Security numbers and other demographic data through real-time and batch access. In addition to providing Web basics such as e-mail, discussion groups, chat sessions, Internet access, and Web site creation and consulting, the service's discount "skip tracing" service helps members save the time and expense of searching for debtors on their own. Toni Nuernberg, administrative vice president and On-Line and MIS head of the Minneapolis-based organization, says "hits" cost about 30 cents, versus 40 or 50 cents at market rates.

Members can also use the Internet to do licensed and bonded account transfers between states. Because every agency isn't approved for interstate collection, files had been mailed or sent between modems. With ACA On-Line, Nuernberg says, members can go online, locate agency members in the new state and execute file transfer through a simple CGI form interface. The process used to take one or two weeks, she says. "Now we know immediately if the account has been accepted."

Usage, says Nuernberg, has shot from around 300 to 1,200 companies since January. In addition to shepherding members onto the Web, ACA hopes to increase the volume of online transfers. Nuernberg is promoting the ANSI X12.248 standard, which she helped develop, for high-volume transmission of credit grantor files. The Web-based approach, she says, offers "EDI without the expense and headaches."

INTERNET TECHNOLOGY can automate risk and credit management as well as accounts receivable. Wakefield & Associates Inc., a Denver-based collection agency serving

national clients such as Citibank, Dayton Hudson, GMAC and Wells Fargo, recently completed an intranet that lets staffers in its Phoenix office enter accounts, create and request reports and update information in an internal data warehouse. N. Scott Burkhardt, vice president of MIS at Wakefield, says instead of forwarding boxes of paper files from Phoenix to Denver, Windows 95 or NT users now enter delinquencies directly into Wakefield's computer system. Once the accounts are loaded, users can log in and review budget and progress online, direct or stop work, update payment information, generate reports or ask the compa-



Collective Bargaining: Marvin Kaulkin, whose company publishes an annual report on the collections industry, says technology is the key to remaining competitive.

ny's MIS department to run ad hoc reports from the data warehouse. Real-time reports are e-mailed within minutes.

Startup costs for Wakefield were \$10,000 in hardware costs only for creating a Web site and six months of CGI interface programming at \$4,000 per month.

Burkhardt says the system already has produced dramatic cuts in networking costs, compared to traditional dial-up or dedicated lines. But the big payoffs are yet to come. By April, Burkhardt says, the company will extend that service to major clients. He believes the planned extranet will slash two weeks from the cash flow and 10 percent to 15 percent off the collection process and reduce data entry errors.

"We are essentially empowering our clients to use the specialized technology inside a collection agency to their own advantage," says Burkhardt. "More important, we will become a business partner, as opposed to an adversary."

The Web, of course, is also helpful in checking the reliability of potential buyers before they incur any debt. Such customer screening is serious business for SkyMall Inc., the largest in-flight catalog company in the United States.

"We take all the credit risks," says Robert Worsley, president and chief executive officer. That means the Phoenix-based SkyMall, not its 87 supplier companies, must absorb any bad credit card transactions taken by air phone, toll-free calls, fax or mail.

"When you have a billing address and shipping address that don't match, over [a] \$30 limit," somebody has to verify the customer's location, explains Worsley. For years, that has been done by SkyMall's seven-person credit check department, where staffers literally call banks and credit card companies to verify account information.

Last year, in anticipation of a slew of new orders arriving via a new Web shopping page, SkyMall scrapped a Hewlett-Packard Co. 3000 system and began outsourcing order entry, billing and fulfillment and collections to LittleNet LLC's Direct Commerce Network. Founded by pioneers in the credit card processing industry, the Lowell, Mass., electronic commerce service provider reduced costs.

A more ambitious strategy, and a new \$14 million intranet/extranet, helps the Federal Home Loan Bank of Dallas check out the credit records of people and institutions hoping to borrow money. Nancy Parker, senior vice president and

director of information technology at the \$20 billion lender, says the bank is rolling out a secure virtual private network that will let 675 member institutions send loan and securities transactions from the bank's secure Web page through Internet pipes, to Federal Home's back-office processing systems, and then out again for viewing on a Netscape browser.

Parker's team created one logical Progress database that consolidated all of the bank's internal databases. As a result, the double-checking of key indicators such as the applicant's collateral, capital and shares in the Federal Home bank now takes only seconds.

"Before, it was a scramble to get applications approved the same day," Parker says. By handling credit screening on "cookie cutter" loan transactions, Parker says, the extranet doesn't just free up sales time; it cuts down on mistakes.

The speed and savings offered by Web technology is a powerful attraction for debt collectors, but the potential for misusing tools such as databases has privacy advocates cringing. After all, if you can track down people to ask them to pay a bill, you can track down people to ask them to buy something, or worse.

"The same technology that can track down anyone for debt collection can also be used by just about anyone to track you down for possibly harmful purposes," says Shari Steele, staff counsel for the Electronic Frontier Foundation in San Francisco.

While Steele hasn't fielded complaints about Web-surfing debt collectors, she recently counseled a woman trying to escape beatings by a husband who used online people finders to locate her.

Others voice concerns about a misuse of e-mail (see "Electric Shock," Page 47) and overly aggressive marketing efforts. At this point, experts say, the manners, mores and laws governing the use of Web technologies are still being formed, some by Web users and others by the courts. Until they are more fully and explicitly rendered, a little business sense and understanding will go a long way. After all, as Christina Harbridge, president of Bridgeport Financial Inc., a collection agency in San Francisco, points out: "We're all debtors, some of us are just a

little more current than others." **CIO**

A Load Owed

Delinquent U.S. debt

Consumer installment

\$1.2 trillion

Student loans

\$20 billion

Child support

\$22 billion

Federal tax

\$110 billion

Federal non-tax

\$51 billion

Each person in the country pays

\$344 more a year

for goods and services because of bad debt



In 1996,

1 out of every 100

U.S. households declared bankruptcy



Between 1990 and 1996, American consumer debt increased by

50 percent



Delinquency rates have risen to above

5 percent

SOURCES: AMERICAN COLLECTORS ASSOCIATION, M. KAULIN & ASSOCIATES, U.S. GENERAL ACCOUNTING OFFICE, MOODY'S INVESTORS SERVICES.

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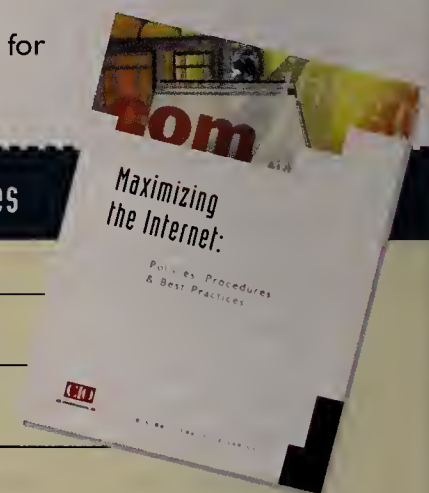
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INSIDER trade-offs

Sun's CIO discusses the intranet balancing act: costs, benefits, risks and measuring value in terms of people as well as profits



From *Intranets: What's the Bottom Line?* by Randy J. Hinrichs (Prentice Hall Inc., 1997). Reprinted with permission of Prentice Hall Inc., Upper Saddle River, N.J.

in his new book *Intranets: What's the Bottom Line?* Randy J. Hinrichs answers that title question in his introduction: "My bottom line is that intranets are about people empowerment, not technology." But Hinrichs' book tackles the question from other angles as well, including business considerations, costs and benefits, staff and organizational issues, and applications.

Hinrichs' book, which one reviewer describes as less of a how-to guide than a why-I-should-bother manual, offers an executive briefing on not just creating or expanding corporate intranets but making them pay off as well. Hinrichs, a veteran intranet strategist who currently works for Microsoft Corp., also includes relevant case histories and interviews with intranet visionaries and pioneers. Notable among them is Sun Microsystems Inc.'s CIO William J. Raduchel, who spoke with Hinrichs about the effects of Sun's intranet on the company's culture and about intranet security, killer apps, metrics and trends in general. A portion of their conversation follows, beginning with Hinrichs' introduction of Raduchel.

Hinrichs: Bill Raduchel has worked in information technology for most of his adult life. While his early roles include academic and administrative positions at Harvard University as well as senior executive roles at McGraw-Hill and Xerox Corp., information technology and planning have been consistent themes throughout. In his current role, he combines strategic direction with practical implementation. He has a broad understanding of corporations and organizations, having also been both the chief financial officer and acting vice president of human resources at Sun. Currently, he leads the effort to make Sun a showcase implementation of Java computing. Bill, what intranet feature do you find the most valuable?

Raduchel: E-mail, believe it or not. E-mail has allowed Sun to do something very valuable: It has allowed us [to participate] in a decision and do it fast. You can be asynchronous and instantly communicative. You can both participate and be quick to act. Sun's culture has built itself on these processes to build rapid response capability.

Hinrichs: Isn't the intranet more than e-mail?

Raduchel: Sure. It's e-mail with Web pages, pictures and video.

Hinrichs: How has [Sun's intranet] helped business-process improvement?

Raduchel: Business-process improvement is something that happens at a lower plane. Web pages are an extension of our culture. We use the network as a fundamental place to conduct business and provide benefits to employees. Place doesn't matter anymore in working together, so a lot has improved there. We can get global involvement in a decision and keep everyone fairly well informed. People use e-mail to tell me what's happening every week. I can visit project Web pages and perceive issues that I can work back into the network. This is just the way we do business.

Ten Things an Intranet Buys You

Hinrichs shares his list of some of the most common business benefits gained from internal Web sites

- 1 Elimination of your complex operating system with integration at the desktop.
- 2 Internet standards for creating a full body of network-centric applications.
- 3 Interoperability between platforms to expedite workflow.
- 4 Increase in enterprise functionality and reliability, enabling electronic commerce.
- 5 Corporate culture of shared knowledge and collaborative workers, resulting in productivity improvements.
- 6 Integrated applications, data, multimedia and e-mail for information sharing.
- 7 Integrated databases, data marts, data warehouses and legacy systems for access to corporate data worldwide.
- 8 Standard access interface regardless of source.
- 9 Integrated and uniformly updated support at the server side.
- 10 A 21st-century investment, yielding phenomenal returns on investment.

Hinrichs: Can you talk about [intranet] costs—hard, soft and hidden?

Raduchel: CIOs face certain problems. Infrastructure costs are very high and getting higher. Current ideas are to load a complex operating system plus data on each desktop, and configure and support it. It costs an awful lot of money.

The hard costs are the costs of maintaining state. "Maintaining state" means applications you can access, file and printer locations, passwords, network locations, etc. These details define who you are on the network. If nothing changes, then state maintenance costs you nothing. That is why the costs are forgotten. In practice, change occurs constantly, and making these changes is a large part of the total cost of ownership. In the mainframe world and in a PC world, state is maintained on a single device. State is bound to the piece of hardware.

The soft costs are the value of participation and acting quickly. Soft costs and soft benefits are gained from having an efficient operating Internet. If you don't, then you're not acting as fast as you should. All of your costs end up in administration. The costs that drive people crazy are the costs of administration.

In addition, lost data and not finding a better way to automate, test and check state are costly.

Hinrichs: With state on the intranet, interactive transactions will accelerate. What killer apps do you see coming out of this?

Raduchel: People are making the same mistake on the intranet as they did on the Internet. The killer apps are local, not global. The press is missing it by not understanding that all politics is local, all activity is local. The power is in local applications. Two thousand Web sites of two, three, six people who create

from the bottom up are creating the intranet. The applications are created by users, who build what they need locally.

The intranet will demonstrate that the power is local as opposed to global innovation. Project Web pages are a great example. If I want to go see what is going on, I go to the proj-

Ten Intranet Truths

Keep in mind these top recommendations from intranet expert Randy Hinrichs as you create or expand your internal Web site

1 An intranet is an art, not a science. It's how you express human thinking and feeling that makes the intranet a communication and collaborative treasure.

2 Design around your business goals, not the technology.

3 The use of the intranet is what distinguishes it. Like knowledge, it's not what you learn or remember; it's how you use knowledge for creative performance.

4 Intranet development is organic. Humans are the center of the intranet. Human values, principles and laws must predominate.

5 Once the consumer becomes an expert at a software interface, he or she won't change quickly.

6 Developers who make their intranet products customizable will gain the competitive advantage. Provide for the customer. Create the market of one.

7 A centralized administration, decentralized infrastructure intranet provides a single point of access to be leveraged by employees and customers. Make this your credo. Consider nothing else.

8 You must get on the intranet and give back to the intranet to learn how to use it well and to become part of it. Create your own site, maintain it and deal with all the issues of dead links, moved sites, limitations and bandwidth consumption.

9 Ideally, employees will take over the intranet. They'll excel, they'll create, they'll reign in chaos, then they'll create a paradigm shift.

10 The network is the computer—the intranet is the network. Prepare yourself for the digital economy.

ect page. This is sophisticated e-mail, instantaneously updated each time I visit. I can see where I need to go next; I can redefine the way work is done. This has become the norm at Sun. The killer app that will drive more social change than any will be e-mail between parents and teachers.

Hinrichs: How do you see Java evolving the intranet?

Raduchel: PCs opened computing power to the individual. Java opened the network to the masses. Java lets huge audiences build value-added applications that are local. Java, like DOS, makes it possible for users to engineer software. DOS was a huge win for Microsoft, letting lots of people innovate on a PC. Java lets you innovate in a distributed networked environment. Everyone can build on the intranet using Java, even if you don't know how to program. The graphical interfaces written for Java programming will democratize technology. The Web subsumes everything.

Hinrichs: What do you mean the Web subsumes everything?

Raduchel: All applications have Web front ends and you unleash the power of the network. This fundamental advantage of the Web is also a double-blind strategy, though. Corporate CIOs have to worry about [an unknown number of] applications talking to [an unknown number of] desktops. It gets mind-boggling, like 400 applications on 25,000 desktops, [which] equals 10 million interconnects. Ten million is very difficult to manage. Imagine 10 times this number. The intranet lets me reduce that to one-to-one, which shifts the burden. I build my Web and I shift my burden. Shifting the burden here is good because [it] dramatically lowers cost and complexity for the network while putting little onto the users and providers of content.

Hinrichs: This sounds like an interconnected world of local users. So will intranets connect with other corporate intranets?

Raduchel: No. Intranets will not be interlinked because the simplification for assuming a closed world is very high. But I'll allow third-party access into my intranet—secured, of



"Intranet security risk is overblown in the sense that it is not some new issue. No matter what information systems you have, be they paper or electronic, you've got a security risk."

—Bill Raduchel

course. Very few corporations let people walk around unescorted. The intranet has electronic escorts, gateways or firewall software monitoring.... With this kind of electronic escort capability, we can interlink some of the processes in other intranets. But when you're done doing business, you are electronically escorted out of the building.

Hinrichs: Security, guest access, confidential data. What else can you say about intranet security?

Raduchel: All the bad things that everyone has done on the network in past years have trained me well. Everyone has a risk on the intranet, especially with quite a large number of internal employees. The risk is overblown in the sense that it is not some new issue. No matter what information systems you have, be they paper or electronic, you've got a security risk. Hackers are a problem, [whether they are] kids or serious criminals. They're thinking of new ways to commit crimes, not verify their stories. Electronic extortion may be the biggest risk. Every corporation has to worry about that. The answer doesn't come from shutting yourself off the Internet, but by using it to manage those risks every day.

Hinrichs: In order to reduce the risk, do you see the intranet as a centralized or decentralized infrastructure?

Raduchel: Infrastructure gets centralized, content gets decentralized. Look at the voice telephone [system]. It's run [in a] highly centralized [way]. But the content is highly decentralized.

Hinrichs: I take it you can manage security more effectively with infrastructure centralized. How would you extend the definition for an intranet computing model?

Raduchel: The key phrase that would extend the definition of the intranet is "content-neutral." The telephone network is content-neutral. So are copiers, television, radio, CD-ROMs, print media, etc. Computer networks were not content-neutral. Indeed, step one traditional development is to specify the appli-

Ten Steps to Creating a Security Policy

Here are some considerations for establishing a blueprint to ensure your network security

- 1 Think of the intranet as a tabula rasa, an empty space. Then determine how to add back levels of needed security.
- 2 Decide who will make the network security policy.
- 3 Conform to existing policies, rules, regulations and laws that the organization is subject to regarding security. Then think of the ease of moving information over an intranet.
- 4 Define procedures to prevent and respond to security incidents.
- 5 Address remote sites, local hosts and users.
- 6 Identify organizational assets, threats, exposure risks, tools and technologies to meet the risks.
- 7 Develop a usage policy.
- 8 Institute an auditing procedure to review network and server usage on a timely basis.
- 9 Plan a response to violation or breakdown.
- 10 Communicate the policy to everyone and review on a regular basis.

cation and then design the infrastructure. The reason the intranet dominates is because it is content-neutral while supporting a very broad range of applications and information. You do not need to know what you are going to use the Web for to build one. This is very different from traditional computing.

Hinrichs: If you change the infrastructure, you'll need a measurement for evaluating your success factors. What kinds of measurements do you use for the intranet?

Raduchel: I look at business metrics: revenue per employee, gross margin per employee, gross margin growth, cycle times and measuring internal processes. It's a simple equation of more orders and more profits. What else matters?

Hinrichs: What about measuring human performance?

Raduchel: Cycle times are human performance times. People can process more information, but information is valuable only if it leads to better decisions.

Hinrichs: The intranet has been equated to an effective decision support environment for quite a while. We've also talked about it as a collaborative and transactional system. From your vantage point, what does the future of the intranet look like?

Raduchel: Basically, [like] the public switched telephone network. The intranet has to evolve toward that model; it's the only mass technology we use today that is universal. Whatever it looks like, it will be more like a telephone and less like a computer. We've got something that can give us more, and that goes further; it's the features and the applications.

Fax, modem, voice, video, telephone and Web phones—they are communication and transaction devices. **CIO**

Randy J. Hinrichs (randyh@microsoft.com) is SalesWeb product manager at Microsoft Corp. and co-author of Web Site Design: A Different Multimedia (Prentice Hall, 1996). Sun Microsystems CIO Bill Raduchel can be reached at wjr@Kernow.Corp.Sun.com.

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The Right Impression

Advertising online is a lot like advertising elsewhere: It's easy to do poorly and hard to do well. A few tips on the latter.

BY JIM STERNE

ADVERTISING HAS A NEW playground. While some of the rules are the same, many are new. If you have a Web site and want to promote it, if you have a brand and want to build it, if you have a product and want more people to buy it, online advertising may be the way to go. On the Internet, this primarily means banners. Oh sure, you can create the top Web site of news about your industry. Yes, you can create a new Web site devoted to good works and (oh, by the way) sponsored by your company. You can insert full-page ads in online games so that your message hits participants in the face. But primarily, Web advertising means banners. It also means big business. The world's largest companies are keenly aware of the volume of Internet log-ons. Of course IBM and Digital are buying ad space in cyberspace. Naturally Microsoft is spending gigabucks on banners. Yes, AT&T wants you to know it is running with the wolves of high-tech. But companies like Toyota, Procter & Gamble and Disney feel it's a good place for some of their ad budgets as well.

Finding an Audience

In July of this year, the Internet Advertising Bureau tallied Web ad revenues for the first quarter of 1997 at 18 percent higher than the same quarter of 1996. If buying stays flat, 1997 sales will hit half a billion dollars. Nobody expects buying to stay flat. The first question any competent advertising or marketing executive asks when looking at the Internet is, Who is looking back? Are your prospective customers out there where they might see your ad? Are there enough of them to make it worth your

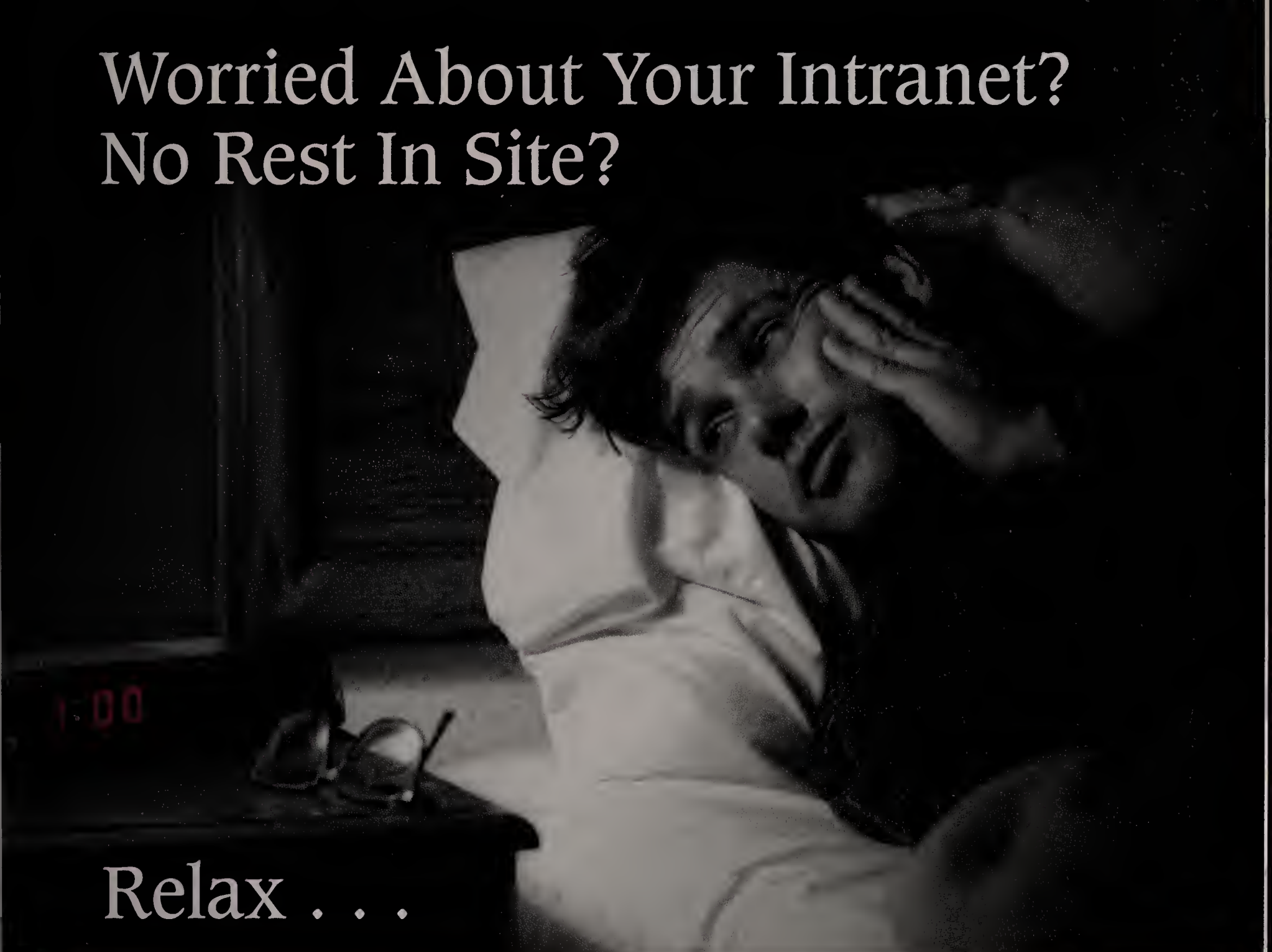
while? The answer comes in two forms. First, depending on what survey you read, anywhere from 18 million to 75 million people are surfing the Web, and the profile of those people is starting to look like your average cross-section of humanity. From this pool of people, some will be in the market for your products.

OK, if you sell shoes and gloves to peasants in Guiyang, China, it's going to be a few years before your customers are online. But if you think selling



Medicare augmentation plans to seniors is out of line, think again. With more time on their hands and less time on their feet, that growing portion of our population is going online. If you don't normally place ads in *Life* magazine to promote your nuclear decontamination consulting services, you won't be buying banners on Yahoo either. But if you place the occasional ad in *The Bulletin of Atomic Scientists*, you should think about buying a banner on the Energy section of NewsPage (www.newspage.com). Fine-tuned targeting makes the Web a great place to advertise.

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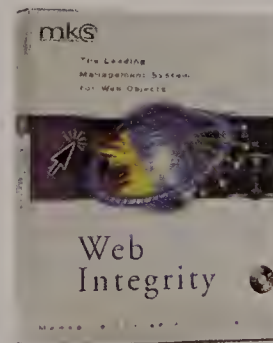
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Banners are easy to create but not easy to create well. It takes a good banner to distract somebody enough to look at it while they're deep in concentration. It takes a great banner to get people to click. If you know why you want to place banners, and you know where to place banners, you still need to create a banner that's going to get attention and make people click.

Why Advertise?

Advertising has two major roles in this world: branding and direct response. Branding is the art of making an impression. Volvo stands for safety. Pepsi is for the younger generation. Macintosh is the computer for the rest of us (however dwindling our ranks may be). Some branding is misguided. Does anybody really believe that pork is the other white meat? Does it make any sense that Novell should be associated with "Rock The Net"? One thing is certain—branding is expensive.

Branding works better with more exposure. Getting exposure takes myriad impressions. The public has to see an ad connecting a concept to a product hundreds of times before it sinks in. You can expect to buy millions of impressions at anywhere from \$1 to \$40 per thousand to achieve "branding." If your name is Nike or Coke, that's just a rounding error in your global ad budget. No big deal. If you're Mom and Pop with a product to push, forget about branding: Direct response is what you want. A call to action like "Buy One, Get One Free!" is the sign of the direct marketer.

Knowing your goals ahead of time is the only way you can succeed. It's certainly the only way you'll be able to measure whether you are succeeding. In the world of branding, the first metric is impressions. How many people saw your banner? Since so much on the Web is measurable, this is a question of how much you spend. The direct marketer uses a different metric: How many people took the time and trouble to actually click on your ad? And how do you raise the odds of increasing the response?

Location, Location, Location

If you want people to click, go to the right people. If you're advertising sporting goods, buying a banner slot on ESPN

SportsZone or at the top of the sports section on Yahoo makes the most sense. If your audience is a select few, find out where they hang out on the Web and advertise there. Randy Kawahara, assistant manager of national advertising at American Honda Motor Co. Inc. in Torrance, Calif., wants the site he advertises on to help filter the surfer. He's interested in putting Civic banners on sites that attract a younger crowd and Accord banners on sites that attract a wealthier audience. Yes, he admits, part

Last year, Excite showed the Saturn banner half a million times. It got a touch over half of one percent click-through.

of his reasoning is associative branding, but filtering is on his mind.

Carolyn Doll, manager of media research and interactive media for Hal Riney & Partners in San Francisco, works on the Saturn Corp. account and doesn't want to filter as much as Kawahara does. Hal Riney does all of those down-home Saturn television ads. "It's all about boxcar numbers for us," says Doll. "The bigger the site, the more the click-through. Yes, we can get three times the click-through on something like Epicurious Food (*food.epicurious.com*) because it attracts women, or on Traveler (*travel.epicurious.com*) because it attracts upscale and sophisticated visitors. But the CPM (cost per thousand) is a lot higher on those, so the cost of each click is higher." Last year, Excite showed the Saturn banner half a million times. It got a touch over half of one percent click-through. The same banner at Epicurious got one-and-a-half percent click-through. But Doll is quick to point out that Excite was the better buy-in cost per click and sheer volume.

As for cost per qualified click, the logic says that the Epicureans are much more likely to become Saturn buyers. But eight times more likely? Doll is doubtful. "When we have better tracking on our own site and the content people can offer us better targeting, we'll rethink it," she says. "Right now, we're

very happy showing our banner to millions of people. After all, our branding is all about regular folks, you know?"

What Makes People Click?

Even if you find the right spot for your spot, you have to find the right message and present it the right way. In the briefest of nutshells, here is a combination of factors gleaned from discussion groups, formal surveys, random rumors and common sense. Place your banner at the top of the page, and duplicate it at the bottom. If you are given an option, always go for the top. Find a way to have your banner stay on the screen as long as possible. Some sites put banners in frames: No matter what the surfer clicks on inside the site, your ad stays with them. After the third exposure, the likelihood of a person clicking on your ad goes way down. Advertise on those sites that limit the number of times a banner is shown to an individual. Add the words, "click here." It works. Use bright colors and animation. You may hate looking at them, but you always look at them.

Wordsmithing

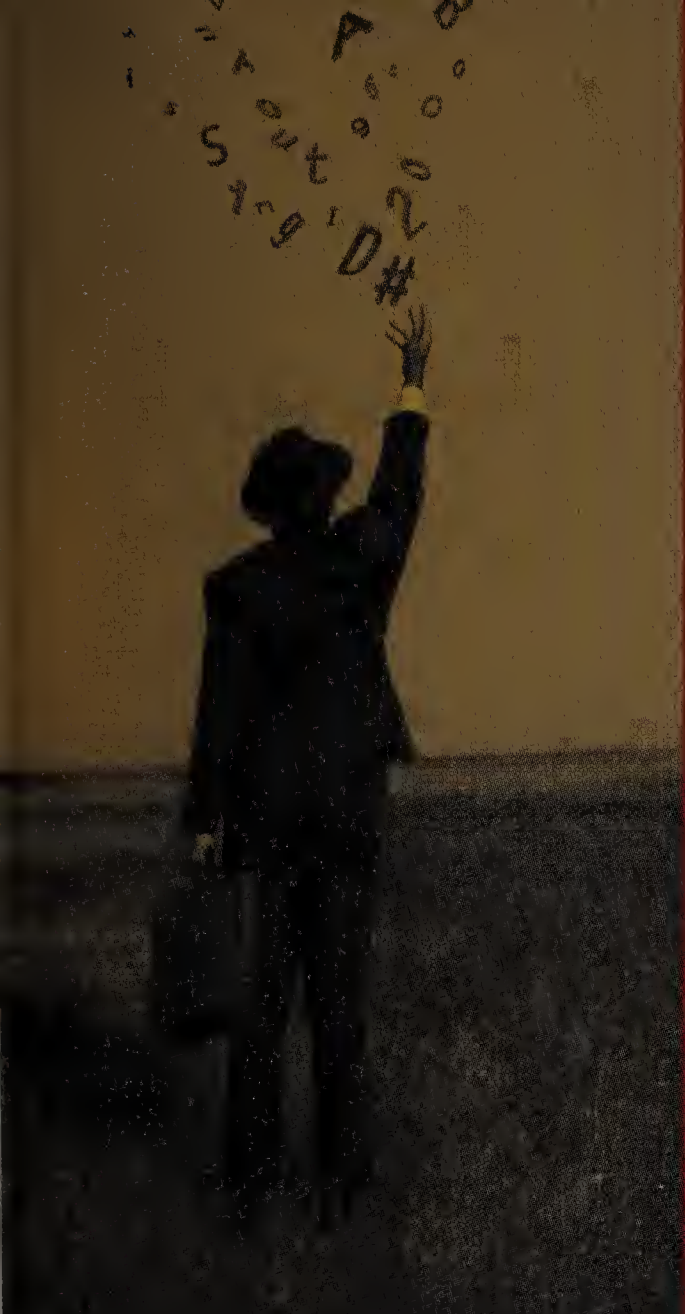
Ron Richards, principal of ResultsLab in San Francisco, has been fine-tuning ads and direct mail pieces for decades. Richards offers this advice: Use evocative language to make the surfer create a mental picture. Find a fundamental desire that your product or service satisfies, or a disaster that it can be used to avoid. Lean toward concrete benefits instead of abstract concepts.

Richards says four imperatives govern all advertising copy:

1. Announce a news story, signal a hot issue or disaster, and offer a breakthrough or extraordinary results.
2. Reset the standard that the buyer should expect, demonstrate uniqueness or make an offer or guarantee.
3. Offer the gift of critical learning.
4. Create urgency.

The media may have changed, but most of the rules stay the same. What will make them click? Make them an offer they can't refuse. **CIO**

Jim Sterne is the author of "What Makes People Click: Advertising on the Internet" (Que, September 1997). He can be reached at jsterne@targeting.com.



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POWER SOURCE

Seek and Ye Shall Find

It's a big Web out there. But getting the information you need when you need it doesn't necessarily have to be a headache.

BY MIKE CARIFIO

BY NOW "GETTING LOST IN THE WEB" HAS become a cliché complete with bad puns about spiders munching on hapless lost victims. If you use the Web purposefully, you've undoubtedly found your goal periodically thwarted when you can't find what you want when you want it. Believe it or not, you often can find what you

want and what you need. But you have to work at it—and you may have to work fairly hard. The Web remains one way of getting the information you need—an important and economical tool, but one that works best when combined with more traditional resources, such as libraries and, of course, people.

Despite the clichés, the problem of finding your way on the Web is very real. First, of course, you've got to find the few sites of interest to you from the hundreds of thousands currently available. Once you've found them, you can track changes to their content using the subscription mechanisms in the latest versions of Microsoft Corp.'s Internet Explorer or Netscape Communications Corp.'s Navigator. Meanwhile, approaching the Internet with a new topic or a new question, even if it's just new to you, takes diligence and creativity.

Perhaps the best thing about the Web is that you can use it to

find out about the Web. And you should use the Web to find out about the Web rather than depending on some Baedeker-style guide to the Internet that you can purchase at the corner bookstore. Such hard-copy indexes are obsolete before the author reads the galleys. But if you insist on this route, at least go for the irony and purchase the book online from Amazon.com or Barnes and Noble.com.

Of course, these hard-copy compendiums have much better counterparts on the Web itself. Basically, directory sites, such as Yahoo, Lycos and Digital Equipment Corp.'s AltaVista, fall into two major camps: those structured explicitly by categories and those that are unstructured. This seemingly innocuous distinction has profound implications to the site's look and feel. Yahoo, for example, presents its directory service as a kind of

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Knowledge To Go
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Database Plus Web Equals Competitive Intelligence
Page 66



decision tree, where you click on links from very general categories to very specific ones and eventually to the URLs themselves. AltaVista, on the other hand, is completely word-based, a sort of supersearch of the Internet, as if the

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entire Internet were in your Word editing window. Other search sites, such as Lycos, present a more hybrid approach, combining categories and searching. Even Yahoo provides very capable extended searching from, of all sites, AltaVista itself.

Search categories are both good and bad. If a particular category—say, consultants—appears to contain people whom you would classify as consultants, then the category has effectively met your needs. But if you end up scratching your head as you scan the category, then it hasn't. Take a suitably abstract category—again, consultant—and it's almost inevitable that you'll start wearing down your fingernails trying to find the right information.

When categories proliferate, it gets harder to click through to the right ones. When sites proliferate, it gets harder to find the right ones. When the combinations proliferate—for example, when you start seeing the same sites in somewhat disparate categories—you lose faith in the indexers. Time for a nonproliferation treaty. But with whom?

Well, perhaps with the categories themselves. Since the pages you're looking for are composed of the words you're seeking, if you index all the important words in your search, you can find the right pages based on those words. Such concordances can grow larger than the very pages they index, but they can also lead to blazingly fast searches, which also allow for combinations of words, for example "consultants" and "electronic commerce." Moreover, as you start to add other kinds of properties, such as the site where each page resides or how old it is, you get a surgical tool to slice through to the heart of the Web.

If a particular query doesn't uncover what you want, you can submit new ones or refine existing ones. With this query language you can look for "cate-

gories" that no one else has even conceived of, much less indexed. Take, for example, "consultants specializing in electronic commerce with commercial host names" more recent than September 1997. And you get this specificity without any extra effort from webmasters or indexers.

Actually, most sites now offer search features along this line. If you also plan to introduce a searching capability to your site, consider the hidden costs. Traditionally, HTML pages were the most amenable to these advanced search techniques because they were the most easily parsed. This is starting to change, as more file types (MIME types) are opening up to indexers. Likewise, visual formats—still images, audio, video and the like—need a bit of assistance in the form of metadata to indicate the words of which they're composed. (Hmmm, starts to sound like categories, doesn't it?) Nonetheless, the latest indexers, such as the Microsoft Index server and Verity Inc.'s product set, make this a fairly painless process both on the back end of building the supporting concordance and the front end of attaching a search form to your Web site. If you want return traffic to your dynamic site—and who doesn't?—then providing this kind of search mechanism is essential. Of course, the most popular Internet search tools approach the Web as one giant database where the searching tool gives you a snapshot of the database at the time you submit the query. Some tools, such as Inference Corp.'s InferenceFind, will even route your query to some predetermined set of search sites and return to you the union of their responses. But many times, your interest in a particular topic or area is ongoing and your search for information resources is a continual background task. Then your search takes on a Zen-like flavor: The answer emerges as you fit new pieces into the

Approaching the Internet with a new topic or a new question, even if it's just new to you, takes diligence and creativity.

puzzle. For these kinds of searches, some of the oldest Web tools—bookmarks, newsgroups and electronic mail—can be combined with some of the newest techniques, such as subscriptions, agents and push technology, to produce very effective results.

These results, of course, won't have the immediacy of an AltaVista query; they may, in fact, take many hours. But, with luck, you'll be rewarded with much better answers. Then there's the lowly bookmark, which has been around since the days of the Mosaic browser. The bookmark file started out as a long list of frequently visited URLs, perhaps with a custom user comment for each one. This approach had some problems; for example, you couldn't share your bookmarks with others and you couldn't group the URLs into any categories. That inability to share is what led to search sites in the first place. In fact, Yahoo started out when its two founders began sharing their bookmark files at Stanford University. Since that time, support for bookmarks has grown dramatically on the desktop, especially in Windows. A new kind of desktop shortcut, called the Internet shortcut, has been incorporated in the Windows shell, and both Navigator and Explorer use it in their browsers. Moreover, since the Internet shortcut is a part of the desktop rather than of the browser, other applications can fetch URLs just as easily as browsers provided, of course, that they have such functionality built in.

Since the Internet shortcut is just a special kind of file, it can be mixed into any file folder right along with regular shortcuts, files and other directories. Moreover, given its unique file extension (.URL), it can be associated with an application like any other Windows application; the default is a Web browser. This brings Web technology right to the desktop, allowing users to share shortcuts that will take them anywhere a URL can go.

With this in mind, Explorer has now

managed to make the bookmark file just another directory, with subdirectories you create, usually representing the categories of your choice. Exploding the bookmark file allows applications other than the Web browser to contribute to your bookmark directory. You can even add bookmarks by drag-and-drop in the Windows Explorer. In the next year to 18 months, it's likely that more and more applications will become Web-based and people will share URLs this way.

Opening the bookmark file is a small step forward in tracking your own view of the Internet. As your bookmark file grows, visiting sites to find out whether they've changed becomes too time-consuming to do in person. Since Web servers will report properties of pages in addition to fetching them, browsers can now keep track of pages by monitoring the page size and the last modification date. This tracking mechanism has been an add-in to both Navigator and Explorer for more than a year, but this capability is now built into the latest version of both.

You can schedule when your subscriptions are checked and what happens if the Web site page is newer than the one you last read: Fetch it or just record that it's been modified. In some cases, you can even be notified that new pages have been

added to a site, not just that existing pages have changed. And this indicator shows up in the bookmarking mechanism, providing the new URLs for the new pages.

New sites coming online may be good for researchers, but a browser's subscription engine can't see them. So how—other than following the appropriate newsgroups, a hit-and-miss approach at best—do you keep up with what's new on the Web? One way is to state your particular interest in a topic, say science fiction, at a bookstore Web site. Then as the site posts new content, it can notify you via electronic mail. Unlike subscriptions, which are mechanical, you rely in that case on the intelli-

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gence and judgment of the site operator, which unfortunately can also be mechanical. Retail commerce sites often will provide this service, since it boosts sales, but other sites could benefit from the technique to increase traffic, which will indirectly cause sales to rise. But then you are at the mercy of the site's webmaster, who may be diligent and meticulous but harried. Sending out e-mail is likely a low priority on his or her cluttered to-do list.

The next option is push technology. In the usual view of Web browsing, the client requests or pulls a page from the server. The client is the

If you want to return traffic to your site—and who doesn't?—finding a painless search mechanism is essential.

active agent, pulling new pages over the wire. The Web server is the passive agent, always running, servicing requests and then listening for the next ones. With push, the active and passive roles are reversed: The server becomes active, sending content to the client; the client becomes passive, displaying new

pages upon receipt. Push is like getting a multimedia newspaper.

In some situations, push is the right approach for the job. For example, push is perfect for updating desktop software periodically. Microsoft appears to be tipping its hand in this regard with its new software distribution standards and with its automatic-update mechanisms in Windows 98. Proponents of push claim that many readers prefer to receive their information this way, getting the right stuff presented to them at the right time and the right speed. But Web purists, myself included, dislike turning active readers into couch potatoes. The mouse remains mightier than the remote.

With push technology—e-mail or Web push—the URL or the pages themselves come to you. With pull technology, you must get the pages. The trick is in knowing what to get when you haven't seen or heard of it yet. Often, you must rely upon the good judgment of others to pave the

Knowledge To Go

Call it knowledge management in a box. Verity Inc.'s IntelliServ, a Web-based application tightly integrated with Microsoft Windows NT, offers information cataloging, user profiling, ad hoc querying and enterprisewide dissemination capability—all in one shrink-wrapped product.

IntelliServ goes beyond typical "push technology" broadcast applications to "narrowcasting," or providing finely tuned information retrieval to ensure that users receive the most relevant information.

Ready to run out of the box, IntelliServ works with any standard Web browser. Users simply establish and store personal profiles. IntelliServ uses Verity's Search '97 technology to monitor, identify and categorize information on an organization's intranet, including file and Web servers, databases, Lotus Notes and Microsoft Exchange servers. When information matching a profile goes onto the intranet, IntelliServ notifies users with e-mail, pagers, tickers or customized intranet "start pages."

Pricing starts at \$4,995 for a server license and five user licenses. Evaluation copies are available on CD-ROMs or by download. For more information on the Sunnyvale, Calif.-based company, visit www.verity.com or call 408 541-1500.



Finding It Online

Digital Equipment Corp.'s AltaVista
www.altavista.digital.com

First Virtual Holdings Inc.'s Firefly
www.firefly.net

Inference Corp.'s InferenceFind
www.inference.com

Lycos Inc.
www.lycos.com

Microsoft Corp.
www.microsoft.com/standards/osd/

Netbot Inc.'s Jango
www.netbot.com

Verity Inc.
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way. Early in the development of the Web, before high-powered search servers ran on big iron, webmasters were also avid readers. They would create elaborate lists of their favorite sites, sometimes called jumpstations. Today, the service continues although, thankfully, the name has died. Of course, technical sites are best represented in this category (Alan Richmond's Virtual Library and the Webmaster's Reference Library come to mind), but there are other good sites on various topics. You'll have to spend some time exploring the Web to find those of interest to you or your customers. Magazine publishers run very good Web sites, augmenting their hard-copy versions with Web site-only articles filled with valuable links. But, as with Web push, you live or die by the sound judgment and good taste of the editorial staff.

This brings us full circle back to subscriptions, but with a twist. The good thing about subscriptions is that you can get your Web browser to watch what you read for changes and additions. Unfortunately, you can't subscribe to new sites. But what if you could? Better yet, what if you had a program or an agent that searched the Internet for you and periodically reported what it found? The concept isn't just science fiction fantasy, but HAL, the computer from *2001*, isn't quite with us yet. Of course, you've probably already used agent technology indirectly with AltaVista. The piece of AltaVista that gathers the content from a Web site so that it can index it is sometimes referred to as an agent or, more specifically, a Web spider. But when experts now talk about agents,

they tend to mean programs that are mobile (like Java applets) can interpret in some way the pages that they "read" and can take some action on your behalf. That's starting to sound like science fiction.

Nonetheless, real companies are securing real venture capital to write program with some of these characteristics. Most of them (Firefly and Netbot Inc.'s Jango are two examples) are currently concentrating on helping consumers find and purchase retail items. The Firefly technology is server-based and helps consumers find products

on the basis of personal profiles kept on the server. Jango's system is client-based and more ambitious: It tries to pull pages from many Web sites in parallel and to aggregate the results in intelligent ways.

With all these resources at your disposal, you should never get lost in the Web again. But if you do, remember that serendipity can, in its own way, serve as a pretty good search tool. **CIO**

Mike Carifio is the president of Understanding Systems, a consulting firm concentrating on Internet applications and electronic commerce. Previously, he developed commerce applications and system tools for Digital Equipment Corp. and Open Market Inc. He can be reached at carifio@usys.com.

Database Plus Web Equals Competitive Intelligence

Using the Web for competitive intelligence is a great idea in theory but often leads to information overload in practice.

InterActive WorkPlace Inc. hopes to resolve that dilemma with InterActive WorkPlace for Sales and Marketing, which the Burlington, Mass.-based company says combines the best of database and Web publishing to streamline information gathering and boost productivity.

Then an intranet-based tool delivers customized business briefings

to salespeople's desktops, where users can view them with standard Web browsers.

InterActive WorkPlace integrates information from inside and outside a company's Internet firewalls, such as news,

company profiles, financial reports, SEC filings, stock quotes and customer transaction data. Company officials say their product is particularly useful for updating and providing new supporting documents for salespeople on the road.

Costs vary, but the company says prices for the product, training and installation start at \$35,000 for the pilot program and reach \$100,000 or more for a full-scale installation.

For more information, visit www.activework.com or call 781 238-1500.



NET BUSINESS: COLLABORATION, CO-OPETITION & PROFIT

DECEMBER 7-10, 1997
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Nowhere in our institutional memory do we have the experience base to deal with the challenges the 'Nets provide... **alternate** distribution and marketing channels, **enterprisewide**

collaboration, modern business practices, **partnerships** with competitors and **new** profit metrics.

Although they have acquired the **experience** to guide business practices, **managers** may sometimes lack the ability to adapt to the **dynamic** technologies that their younger **Web-savvy** counterparts possess. How will executives embrace these **new technologies** and the early majority articulate the **benefits** of this new business medium?

Net Business: Collaboration, Co-opetition & Profit, to be held December 7-10 at the Century Plaza Hotel & Tower in Los Angeles, will address these issues. Moderated by **Tom Davenport** and featuring CIO's vice president of technology, **Tim Horgan**, we will explore both the required multi-disciplinary partnerships and affiliations necessary for improving 'Net **business** results and **business mastery**.

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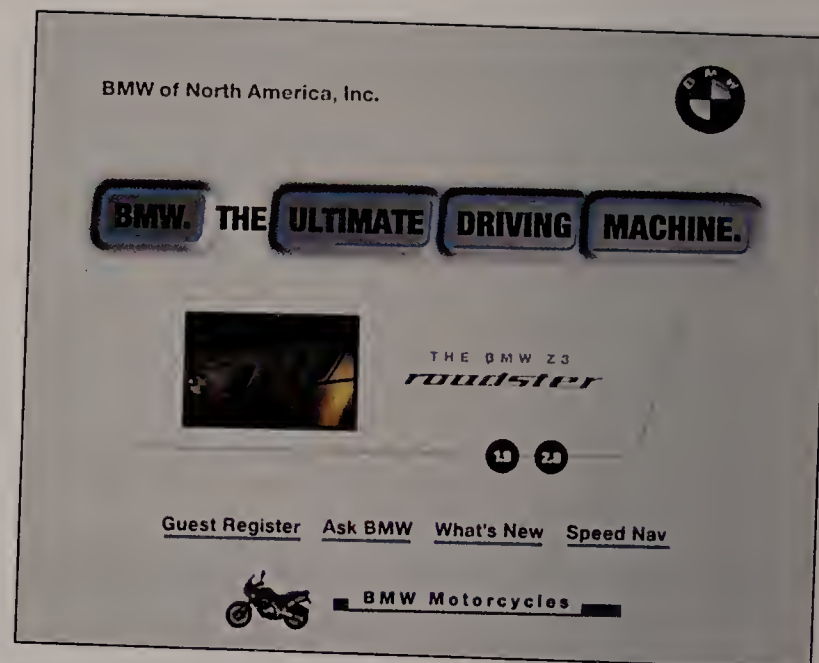
BY RUTH GREENBERG

WITH 150,000 HITS A DAY, the Web site for BMW of North America Inc. (www.bmwusa.com) didn't need to attract more visitors, but the marketing department believed that the automaker's image as a technology leader would be enhanced if they spruced up the interface.

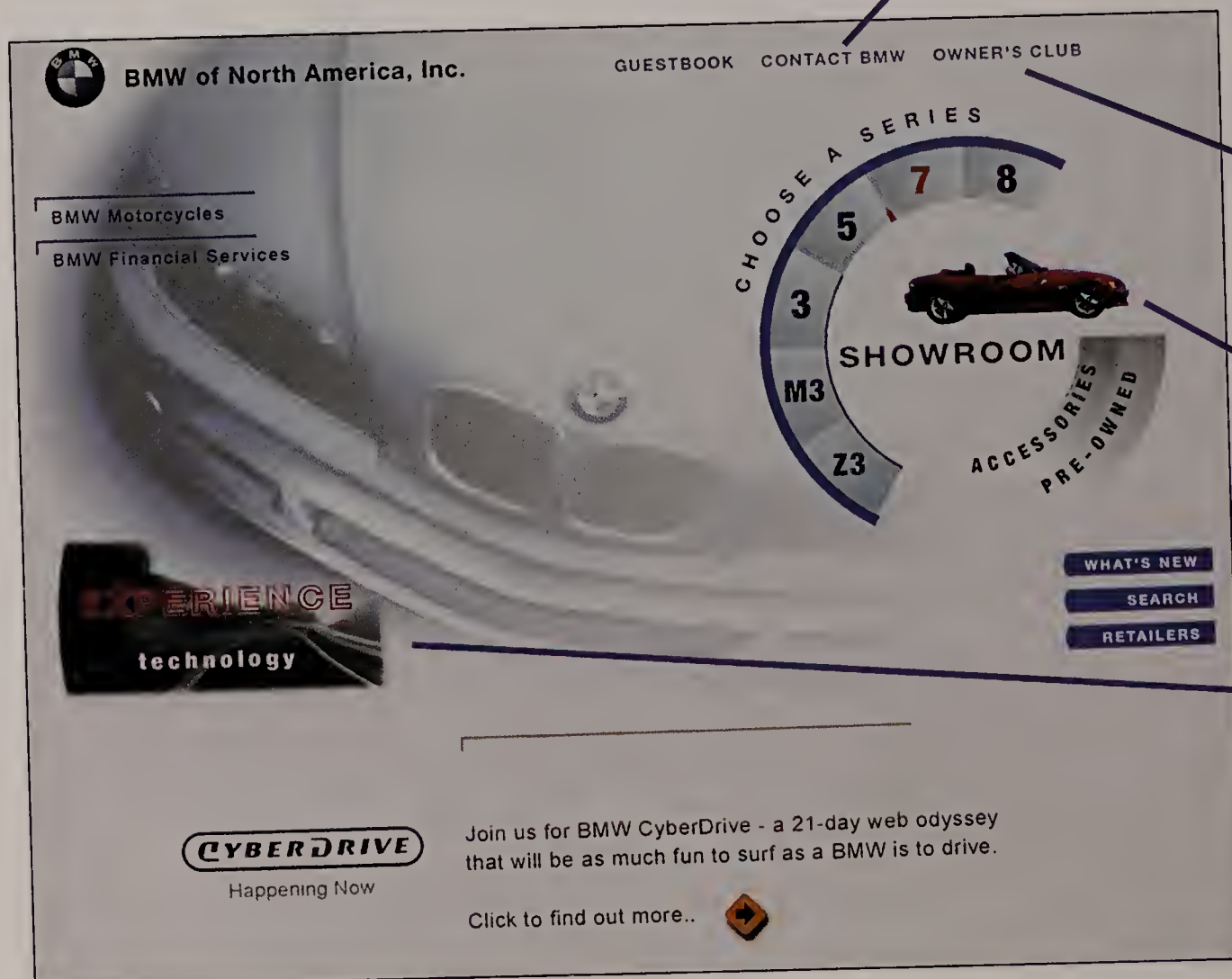
BMW replaced its old site, which had static images in a gridlike pattern, with a more visually compelling design. The new site retains the same spare style as its predecessor but uses features such as a morphing image of a BMW to entice visitors to deeper exploration. A newly designed media section lets PR people track media inquiries and answer questions without time-consuming telephone calls.

BMW hopes to make its Web site both entertaining for all comers and informative enough for the most critical prospective customers. **CIO**

Editorial Assistant Ruth Greenberg can be reached at ruthg@cio.com.



BMW's initial site offered little interactivity.



Feedback link lets car designers scan incoming e-mail for ideas about future features and accessories.

Interactive Owner's Club lets buyers chat about buying experiences.

BMW icon morphs from one model to the next, allowing visitors to drill down to information on various car models.

Virtual reality technology puts drivers behind the wheel, letting them test new BMW features.

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